# DETAILED COST MODEL RESULTS FOR THE ADDENDUM TO THE

# ASSESSMENT OF THE POTENTIAL COSTS, BENEFITS, & OTHER IMPACTS OF THE HAZARDOUS WASTE COMBUSTION MACT STANDARDS: FINAL RULE (JULY 1, 1999)

## LIST OF EXHIBITS

### (0% Price Pass-Through; PM CEM Option 1: Required for All Facilities)

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL COMPLIANCE COSTS (millions)**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites | Total |
|---|---|---|---|---|---|---|
| Floor (50%) | $24 | $3 | $8 | $40 | $7 | $83 |
| Floor (70%) | $16 | $3 | $8 | $36 | $7 | $69 |
| Rec (50%) | $26 | $4 | $8 | $44 | $7 | $89 |
| Rec (70%) | $19 | $4 | $8 | $40 | $7 | $77 |
| BTF-ACI (50%) | $34 | $5 | $11 | $67 | $27 | $144 |
| BTF-ACI (70%) | $27 | $5 | $11 | $62 | $26 | $130 |

**Notes:**

1. Estimates assume that all facilities comply. Facilities non-viable in the baseline are included.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $728,353 | $312,665 | $322,837 | $292,830 | $281,064 |
| Floor (70%) | $495,465 | $265,102 | $294,313 | $259,041 | $261,146 |
| Rec (50%) | $773,990 | $394,025 | $323,198 | $321,088 | $281,064 |
| Rec (70%) | $578,418 | $360,261 | $297,774 | $289,350 | $261,146 |
| BTF-ACI (50%) | $1,043,019 | $508,367 | $435,023 | $484,470 | $1,061,809 |
| BTF-ACI (70%) | $818,226 | $464,470 | $411,798 | $447,559 | $1,042,619 |

**Notes:**

## AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER TON
## (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $31 | $37 | $134 | $20,110 |
| Floor (70%) | $23 | $31 | $129 | $19,447 |
| Rec (50%) | $33 | $49 | $147 | $20,225 |
| Rec (70%) | $26 | $45 | $139 | $19,575 |
| BTF-ACI (50%) | $44 | $66 | $154 | $18,185 |
| BTF-ACI (70%) | $35 | $59 | $145 | $18,085 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION

**Price pass through assumed:** **0%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $728,353 | $312,665 | $298,694 | $313,997 | $281,064 |
| Floor (70%) | $495,465 | $265,102 | $268,924 | $269,565 | $261,146 |
| Rec (50%) | $773,990 | $394,025 | $303,414 | $330,878 | $281,064 |
| Rec (70%) | $578,418 | $360,261 | $277,499 | $288,094 | $261,146 |
| BTF-ACI (50%) | $1,043,019 | $477,964 | $426,560 | $574,293 | $1,061,809 |
| BTF-ACI (70%) | $818,226 | $464,470 | $403,222 | $525,451 | $1,042,619 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### AVERAGE TOTAL ANNUAL BASELINE COST OF BURNING WASTE AND COMPLIANCE COSTS PER TON OF HAZARDOUS WASTE BURNED (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Baseline** | $74 | $114 | $658 | $36,325 |
| **Compliance Costs** | | | | |
| Floor (50%) | $31 | $37 | $134 | $20,110 |
| Floor (70%) | $23 | $31 | $129 | $19,447 |
| Rec (50%) | $33 | $49 | $147 | $20,225 |
| Rec (70%) | $26 | $45 | $139 | $19,575 |
| BTF-ACI (50%) | $44 | $66 | $154 | $18,185 |
| BTF-ACI (70%) | $35 | $59 | $145 | $18,085 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. On-site incinerator baseline and compliance costs per ton are high due to the large number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger quantities of hazardous waste compliance costs per ton would actually be lower. If facilities are burning large volumes of non hazardous waste in addition to the hazardous waste, baseline costs per ton would be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**BASELINE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED**
**(Number of Combustion systems Falling in Range)**

| | <$0 | $0 - $50 | $51 - $100 | $101 - $150 | >$150 |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 8 | 15 | 10 |
| LWA Kilns | 0 | 0 | 8 | 3 | 0 |
| Commercial Incinerators | 3 | 1 | 1 | 1 | 20 |
| On-site Incinerators | 48 | 13 | 11 | 11 | 56 |

**BASELINE OPERATING PROFITS AS A PERCENTAGE OF BASELINE WEIGHTED AVERAGE PRICES PER TON**
**(Number of Combustion systems Falling in Range)**

| | <0% | 0% - 10% | 11% - 25% | 26% - 50% | >50% |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 0 | 2 | 31 |
| LWA Kilns | 0 | 0 | 0 | 0 | 10 |
| Commercial Incinerators | 3 | 0 | 3 | 8 | 13 |
| On-site Incinerators | 48 | 8 | 24 | 19 | 40 |

**Notes:**

1. Baseline Operating Profits = (weighted average price per ton + weighted average energy savings per ton) - total annual baseline costs per ton. Total annual baseline costs include fixed annual capital costs, fixed annual operating and maintenance costs, and annual variable costs.
2. Baseline operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Number of systems with average operating profits less than $0 (or <0%) includes those burning very little or no waste.
4. Baseline operating profits are calculated at the system level. Consolidating burning into fewer systems may reduce facility closures, explaining why the system estimates presented in this exhibit appear higher than the facility closure presented in later exhibits.
5. Includes combustion systems not currently burning waste in the cement kiln, LWAK, and commercial incinerator sectors; or burning less than 50 tons per year in the on-site incinerator sector.

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 33% | 27% | 33% | 27% | 61% | 52% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 45% | 36% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 45% | 33% | 45% | 33% | 39% | 30% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 3% | 3% | 3% | 3% | 0% | 0% |
| Fabric Filter DOM, mod | 9% | 6% | 9% | 6% | 6% | 6% |
| DESP DOM, small | 6% | 0% | 6% | 0% | 3% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 3% | 3% | 3% | 3% | 3% | 3% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 55% | 42% | 64% | 52% | 73% | 55% |
| None | 12% | 27% | 3% | 21% | 3% | 18% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 63% | 50% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 63% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 88% | 88% | 88% | 88% | 50% | 50% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 25% | 13% | 25% | 13% | 13% | 0% |
| Fabric Filter DOM, mod | 13% | 0% | 13% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 75% | 75% | 75% | 75% |
| Feed Control | 100% | 75% | 63% | 63% | 50% | 63% |
| None | 0% | 13% | 0% | 0% | 0% | 0% |

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 15% | 10% | 15% | 15% | 40% | 40% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 20% | 20% | 85% | 85% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 55% | 50% | 45% | 40% | 20% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 5% | 5% | 35% | 35% |
| Fabric Filter DOM, small | 5% | 5% | 5% | 5% | 5% | 5% |
| Fabric Filter DOM, mod | 10% | 5% | 10% | 5% | 10% | 5% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 5% | 0% | 5% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 0% | 0% |
| HEWS DOM, small | 0% | 5% | 0% | 5% | 0% | 0% |
| HEWS DOM, mod | 15% | 10% | 15% | 10% | 5% | 5% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 5% | 0% | 5% | 0% | 5% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 85% | 80% | 80% | 75% | 70% | 65% |
| None | 5% | 5% | 5% | 5% | 5% | 5% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 67% | 65% | 71% | 69% | 85% | 81% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 15% | 15% | 71% | 60% |
| New Carbon Bed | 0% | 0% | 2% | 2% | 6% | 6% |
| New Quencher | 17% | 17% | 12% | 12% | 10% | 10% |
| New Afterburner | 6% | 2% | 6% | 2% | 6% | 2% |
| New Reheater | 0% | 0% | 8% | 8% | 60% | 48% |
| Fabric Filter DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| Fabric Filter DOM, mod | 2% | 0% | 2% | 0% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| HEWS DOM, mod | 10% | 10% | 8% | 8% | 2% | 2% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 4% | 2% | 4% | 2% | 4% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 46% | 40% | 42% | 37% | 42% | 52% |
| None | 6% | 8% | 4% | 6% | 2% | 2% |
| **Government On-site Incinerators** | | | | | | |
| New Fabric Filters | 29% | 24% | 29% | 24% | 38% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 48% | 43% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 5% |
| New Afterburner | 5% | 5% | 5% | 5% | 5% | 5% |
| New Reheater | 0% | 0% | 0% | 0% | 19% | 19% |
| Fabric Filter DOM, small | 0% | 5% | 0% | 5% | 0% | 5% |
| Fabric Filter DOM, mod | 14% | 10% | 14% | 10% | 14% | 10% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 5% | 5% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 14% | 14% | 14% | 14% | 14% | 14% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 52% | 57% | 52% | 57% | 52% |
| None | 19% | 19% | 19% | 19% | 14% | 14% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Short Term | | Long Term | |
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 2% | 33% | 8% | 46% |
| BTF-ACI (70%) | 0% | 6% | 0% | 25% | 10% | 10% | 2% | 31% | 8% | 46% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** 0%

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 60% | 0% | 40% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 60% | 0% | 40% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 60% | 0% | 40% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 60% | 0% | 40% |
| BTF-ACI (50%) | 100% | 0% | 0% | 88% | 0% | 13% | 90% | 0% | 10% | 54% | 0% | 46% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 54% | 0% | 46% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Floor (70%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 94% | 0% | 6% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (70%) | 94% | 0% | 6% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 94% | 0% | 6% | 75% | 0% | 25% | 90% | 0% | 10% | 42% | 0% | 58% |
| BTF-ACI (70%) | 94% | 0% | 6% | 88% | 0% | 13% | 90% | 0% | 10% | 46% | 0% | 54% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **0%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $24 | $3 | $7 | $26 | $7 | $67 | -19% |
| Floor (70%) | $16 | $3 | $6 | $22 | $7 | $54 | -22% |
| Rec (50%) | $26 | $4 | $7 | $27 | $7 | $71 | -21% |
| Rec (70%) | $19 | $4 | $6 | $24 | $7 | $59 | -23% |
| BTF-ACI (50%) | $34 | $4 | $10 | $43 | $27 | $118 | -18% |
| BTF-ACI (70%) | $27 | $5 | $9 | $39 | $26 | $106 | -18% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **0%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | $6.03 |
| BTF-ACI (70%) | $6.03 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS AFTER COMBUSTION SYSTEM CONSOLIDATIONS
(millions)
(Includes Cost of Waste Diversion)

**Price pass through assumed:** **0%**

| Option | Total |
|---|---|
| Floor (50%) | $67 |
| Floor (70%) | $54 |
| Rec (50%) | $71 |
| Rec (70%) | $60 |
| BTF-ACI (50%) | $124 |
| BTF-ACI (70%) | $112 |

**Notes:**

1. Compliance costs after consolidation include the costs for those systems that will continue to burn waste, as well as the shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning wastes on-site. Other types of combustion systems that stop burning wastes do not incur compliance costs and therefore are excluded.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specfic firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 59,780 | 62,950 | 2% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 59,780 | 62,950 | 2% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Floor (70%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Rec (50%) | 28,490 | 0 | 3,170 | 111,330 | 142,990 | 4% |
| Rec (70%) | 28,490 | 0 | 3,170 | 111,330 | 142,990 | 4% |
| BTF-ACI (50%) | 28,490 | 7,380 | 3,170 | 199,820 | 238,860 | 7% |
| BTF-ACI (70%) | 28,490 | 2,730 | 3,170 | 170,050 | 204,440 | 6% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON
### (Short Term - After Consolidation)

**Price pass through assumed:** **0%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $31 | $37 | $17 | $33 |
| Floor (70%) | $23 | $31 | $14 | $29 |
| Rec (50%) | $33 | $49 | $17 | $34 |
| Rec (70%) | $26 | $45 | $15 | $30 |
| BTF-ACI (50%) | $44 | $51 | $21 | $36 |
| BTF-ACI (70%) | $35 | $59 | $19 | $33 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed: 0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 23 |
| BTF-ACI (70%) | 0 | 0 | 0 | 23 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 42 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 1 | 0 | 0 | 13 |
| Floor (70%) | 1 | 0 | 0 | 13 |
| Rec (50%) | 2 | 0 | 0 | 13 |
| Rec (70%) | 2 | 0 | 0 | 13 |
| BTF-ACI (50%) | 2 | 0 | 0 | 23 |
| BTF-ACI (70%) | 2 | 0 | 0 | 20 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 21% |
| BTF-ACI (70%) | 0% | 0% | 0% | 21% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 12% |
| Floor (70%) | 6% | 0% | 0% | 12% |
| Rec (50%) | 11% | 0% | 0% | 12% |
| Rec (70%) | 11% | 0% | 0% | 12% |
| BTF-ACI (50%) | 11% | 0% | 0% | 21% |
| BTF-ACI (70%) | 11% | 0% | 0% | 18% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED SHORT-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 182 | 182 | 262 | 262 |
| Floor (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 252 | 131 | 252 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 252 | 131 | 252 |
| Rec (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 252 | 131 | 252 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 252 | 131 | 252 |
| BTF-ACI (50%) | 0 | 0 | 0 | 3 | 0 | 0 | 147 | 276 | 147 | 278 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 147 | 276 | 147 | 276 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED LONG-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed: 0%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 345 | 408 | 425 | 488 |
| Floor (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Floor (70%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Rec (50%) | 42 | 42 | 0 | 0 | 0 | 0 | 98 | 116 | 140 | 158 |
| Rec (70%) | 42 | 42 | 0 | 0 | 0 | 0 | 98 | 116 | 140 | 158 |
| BTF-ACI (50%) | 42 | 42 | 0 | 5 | 0 | 0 | 145 | 177 | 187 | 224 |
| BTF-ACI (70%) | 42 | 42 | 0 | 3 | 0 | 0 | 124 | 132 | 166 | 177 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 30 | 5 | 127 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 56 | 29 | 130 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 80 | 8 | 152 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **16** | **34** | **169** | **43** | 416 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 26 | 5 | 95 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 55 | 29 | 128 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 8 | 72 | 7 | 126 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **113** | **15** | **30** | **157** | **42** | 357 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 36 | 5 | 137 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 54 | 29 | 128 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 95 | 8 | 171 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **153** | **19** | **40** | **188** | **43** | 443 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 33 | 5 | 105 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 52 | 29 | 126 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 86 | 7 | 146 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **113** | **17** | **37** | **174** | **42** | 384 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 8 | 22 | 80 | 13 | 222 |
| CEMs/Monitoring Equipment | 25 | 5 | 15 | 56 | 29 | 129 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 14 | 35 | 179 | 24 | 337 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **209** | **27** | **73** | **319** | **67** | 696 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 69 | 13 | 188 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 56 | 29 | 130 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 157 | 22 | 295 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **171** | **29** | **71** | **285** | **65** | 621 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $0 | $0 | $0 | $0 |
| Floor (70%) | $0 | $0 | $0 | $0 |
| Rec (50%) | $0 | $0 | $0 | $0 |
| Rec (70%) | $0 | $0 | $0 | $0 |
| BTF-ACI (50%) | $0 | $0 | $0 | $0 |
| BTF-ACI (70%) | $0 | $0 | $0 | $0 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 15% | 9% | 39% | 24% | 12% | 0% | 25% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 33% | 21% | 37% | 6% | 4% | 24% | 14% | 43% | 10% | 10% |
| Floor (70%) | 30% | 9% | 36% | 21% | 3% | 13% | 13% | 50% | 25% | 0% | 85% | 5% | 10% | 0% | 0% | 38% | 25% | 27% | 6% | 4% | 33% | 14% | 33% | 5% | 14% |
| Rec (50%) | 3% | 21% | 36% | 21% | 18% | 0% | 0% | 75% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 27% | 19% | 48% | 0% | 6% | 24% | 14% | 43% | 10% | 10% |
| Rec (70%) | 27% | 12% | 30% | 24% | 6% | 0% | 0% | 75% | 25% | 0% | 85% | 10% | 5% | 0% | 0% | 33% | 23% | 38% | 2% | 4% | 33% | 14% | 33% | 5% | 14% |
| BTF-ACI (50%) | 3% | 6% | 30% | 30% | 30% | 0% | 0% | 38% | 38% | 25% | 60% | 30% | 10% | 0% | 0% | 13% | 25% | 46% | 8% | 8% | 19% | 10% | 33% | 24% | 14% |
| BTF-ACI (70%) | 21% | 6% | 15% | 36% | 21% | 0% | 0% | 38% | 50% | 13% | 70% | 25% | 5% | 0% | 0% | 15% | 31% | 38% | 10% | 6% | 24% | 14% | 24% | 19% | 19% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 39% | 30% | 30% | 0% | 0% | 13% | 50% | 38% | 0% | 0% | 90% | 0% | 0% | 0% | 10% | 48% | 13% | 10% | 15% | 13% |
| Floor (70%) | 61% | 18% | 21% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 10% | 19% | 10% |
| Rec (50%) | 39% | 30% | 30% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 48% | 13% | 12% | 12% | 15% |
| Rec (70%) | 52% | 27% | 21% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 12% | 15% | 12% |
| BTF-ACI (50%) | 24% | 27% | 45% | 3% | 0% | 0% | 13% | 63% | 25% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 10% | 19% | 23% | 12% |
| BTF-ACI (70%) | 36% | 24% | 36% | 3% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 21% | 12% | 19% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **0%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after | Operating Profit Margin | | % Margin after | Operating Profit Margin | | % Margin after | Operating Profit Margin | | % Margin after |
| | $ Change | % Change | the Rule | $ Change | % Change | the Rule | $ Change | % Change | the Rule | $ Change | % Change | the Rule |
| Floor (50%) | ($22) | -16% | 68% | ($37) | -42% | 37% | ($17) | -4% | 56% | ($33) | -8% | 62% |
| Floor (70%) | ($15) | -11% | 72% | ($31) | -35% | 42% | ($14) | -3% | 56% | ($29) | -7% | 63% |
| Rec (50%) | ($22) | -16% | 68% | ($49) | -55% | 29% | ($17) | -4% | 56% | ($34) | -8% | 62% |
| Rec (70%) | ($16) | -12% | 71% | ($45) | -51% | 32% | ($15) | -4% | 56% | ($30) | -8% | 62% |
| BTF-ACI (50%) | ($47) | -34% | 53% | ($51) | -51% | 36% | ($21) | -5% | 55% | ($36) | -8% | 64% |
| BTF-ACI (70%) | ($35) | -25% | 61% | ($59) | -68% | 21% | ($19) | -5% | 56% | ($33) | -8% | 64% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.

## LIST OF EXHIBITS

### (0% Price Pass-Through; PM CEM Option 2: Not Required for Any Facilities)

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL COMPLIANCE COSTS (millions)**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites | Total |
|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $7 | $33 | $4 | $69 |
| Floor (70%) | $15 | $2 | $6 | $28 | $4 | $55 |
| Rec (50%) | $24 | $3 | $7 | $37 | $4 | $75 |
| Rec (70%) | $17 | $3 | $6 | $32 | $4 | $63 |
| BTF-ACI (50%) | $33 | $5 | $10 | $59 | $24 | $130 |
| BTF-ACI (70%) | $25 | $4 | $9 | $54 | $24 | $116 |

**Notes:**

1. Estimates assume that all facilities comply. Facilities non-viable in the baseline are included.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $677,373 | $260,252 | $267,273 | $237,552 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $238,749 | $203,763 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $267,634 | $265,811 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $242,210 | $234,073 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $379,459 | $429,193 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $356,234 | $392,281 | $941,121 |

**Notes:**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER TON**
**(Before Consolidation)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### AVERAGE TOTAL ANNUAL BASELINE COST OF BURNING WASTE AND COMPLIANCE COSTS PER TON OF HAZARDOUS WASTE BURNED (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Baseline** | $74 | $114 | $658 | $36,325 |
| **Compliance Costs** | | | | |
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. On-site incinerator baseline and compliance costs per ton are high due to the large number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger quantities of hazardous waste compliance costs per ton would actually be lower. If facilities are burning large volumes of non hazardous waste in addition to the hazardous waste, baseline costs per ton would be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**BASELINE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED**
**(Number of Combustion systems Falling in Range)**

| | <$0 | $0 - $50 | $51 - $100 | $101 - $150 | >$150 |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 8 | 15 | 10 |
| LWA Kilns | 0 | 0 | 8 | 3 | 0 |
| Commercial Incinerators | 3 | 1 | 1 | 1 | 20 |
| On-site Incinerators | 48 | 13 | 11 | 11 | 56 |

**BASELINE OPERATING PROFITS AS A PERCENTAGE OF BASELINE WEIGHTED AVERAGE PRICES PER TON**
**(Number of Combustion systems Falling in Range)**

| | <0% | 0% - 10% | 11% - 25% | 26% - 50% | >50% |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 0 | 2 | 31 |
| LWA Kilns | 0 | 0 | 0 | 0 | 10 |
| Commercial Incinerators | 3 | 0 | 3 | 8 | 13 |
| On-site Incinerators | 48 | 8 | 24 | 19 | 40 |

**Notes:**

1. Baseline Operating Profits = (weighted average price per ton + weighted average energy savings per ton) - total annual baseline costs per ton. Total annual baseline costs include fixed annual capital costs, fixed annual operating and maintenance costs, and annual variable costs.
2. Baseline operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Number of systems with average operating profits less than $0 (or <0%) includes those burning very little or no waste.
4. Baseline operating profits are calculated at the system level. Consolidating burning into fewer systems may reduce facility closures, explaining why the system estimates presented in this exhibit appear higher than the facility closure presented in later exhibits.
5. Includes combustion systems not currently burning waste in the cement kiln, LWAK, and commercial incinerator sectors; or burning less than 50 tons per year in the on-site incinerator sector.

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 33% | 27% | 33% | 27% | 61% | 52% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 45% | 36% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 45% | 33% | 45% | 33% | 39% | 30% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 3% | 3% | 3% | 3% | 0% | 0% |
| Fabric Filter DOM, mod | 9% | 6% | 9% | 6% | 6% | 6% |
| DESP DOM, small | 6% | 0% | 6% | 0% | 3% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 3% | 3% | 3% | 3% | 3% | 3% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 55% | 42% | 64% | 52% | 73% | 55% |
| None | 12% | 27% | 3% | 21% | 3% | 18% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 63% | 50% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 63% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 88% | 88% | 88% | 88% | 50% | 50% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 25% | 13% | 25% | 13% | 13% | 0% |
| Fabric Filter DOM, mod | 13% | 0% | 13% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 75% | 75% | 75% | 75% |
| Feed Control | 100% | 75% | 63% | 63% | 50% | 63% |
| None | 0% | 13% | 0% | 0% | 0% | 0% |

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 15% | 10% | 15% | 15% | 40% | 40% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 20% | 20% | 85% | 85% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 55% | 50% | 45% | 40% | 20% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 5% | 5% | 35% | 35% |
| Fabric Filter DOM, small | 5% | 5% | 5% | 5% | 5% | 5% |
| Fabric Filter DOM, mod | 10% | 5% | 10% | 5% | 10% | 5% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 5% | 0% | 5% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 0% | 0% |
| HEWS DOM, small | 0% | 5% | 0% | 5% | 0% | 0% |
| HEWS DOM, mod | 15% | 10% | 15% | 10% | 5% | 5% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 5% | 0% | 5% | 0% | 5% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 85% | 80% | 80% | 75% | 70% | 65% |
| None | 5% | 5% | 5% | 5% | 5% | 5% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 67% | 65% | 71% | 69% | 85% | 81% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 15% | 15% | 71% | 60% |
| New Carbon Bed | 0% | 0% | 2% | 2% | 6% | 6% |
| New Quencher | 17% | 17% | 12% | 12% | 10% | 10% |
| New Afterburner | 6% | 2% | 6% | 2% | 6% | 2% |
| New Reheater | 0% | 0% | 8% | 8% | 60% | 48% |
| Fabric Filter DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| Fabric Filter DOM, mod | 2% | 0% | 2% | 0% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| HEWS DOM, mod | 10% | 10% | 8% | 8% | 2% | 2% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 4% | 2% | 4% | 2% | 4% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 46% | 40% | 42% | 37% | 42% | 52% |
| None | 6% | 8% | 4% | 6% | 2% | 2% |
| **Government On-site Incinerators** | | | | | | |
| New Fabric Filters | 29% | 24% | 29% | 24% | 38% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 48% | 43% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 5% |
| New Afterburner | 5% | 5% | 5% | 5% | 5% | 5% |
| New Reheater | 0% | 0% | 0% | 0% | 19% | 19% |
| Fabric Filter DOM, small | 0% | 5% | 0% | 5% | 0% | 5% |
| Fabric Filter DOM, mod | 14% | 10% | 14% | 10% | 14% | 10% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 5% | 5% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 14% | 14% | 14% | 14% | 14% | 14% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 52% | 57% | 52% | 57% | 52% |
| None | 19% | 19% | 19% | 19% | 14% | 14% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Short Term | | Long Term | |
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 10% | 23% | 12% | 42% |
| BTF-ACI (70%) | 0% | 6% | 0% | 13% | 10% | 10% | 12% | 21% | 12% | 42% |

**Notes:**

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Short Term | | Long Term | |
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 10% | 23% | 12% | 42% |
| BTF-ACI (70%) | 0% | 6% | 0% | 13% | 10% | 10% | 12% | 21% | 12% | 42% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **0%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $6 | $22 | $4 | $57 | -17% |
| Floor (70%) | $15 | $2 | $5 | $18 | $4 | $44 | -20% |
| Rec (50%) | $24 | $3 | $6 | $23 | $4 | $61 | -19% |
| Rec (70%) | $17 | $3 | $5 | $20 | $4 | $50 | -21% |
| BTF-ACI (50%) | $33 | $4 | $9 | $39 | $24 | $108 | -17% |
| BTF-ACI (70%) | $25 | $4 | $8 | $37 | $24 | $98 | -16% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **0%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | $6.03 |
| BTF-ACI (70%) | $2.27 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS AFTER COMBUSTION SYSTEM CONSOLIDATIONS
(millions)
(Includes Cost of Waste Diversion)

**Price pass through assumed:** **0%**

| Option | Total |
|---|---|
| Floor (50%) | $57 |
| Floor (70%) | $44 |
| Rec (50%) | $61 |
| Rec (70%) | $50 |
| BTF-ACI (50%) | $114 |
| BTF-ACI (70%) | $100 |

**Notes:**

1. Compliance costs after consolidation include the costs for those systems that will continue to burn waste, as well as the shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning wastes on-site. Other types of combustion systems that stop burning wastes do not incur compliance costs and therefore are excluded.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specfic firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION

**Price pass through assumed:** **0%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $677,373 | $260,252 | $243,257 | $251,839 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $213,488 | $210,100 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $247,977 | $267,697 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $222,062 | $227,506 | $159,648 |
| BTF-ACI (50%) | $992,039 | $425,347 | $371,123 | $506,190 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $347,785 | $465,008 | $941,121 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON
### (Short Term - After Consolidation)

**Price pass through assumed:** **0%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $14 | $28 |
| Floor (70%) | $21 | $24 | $11 | $24 |
| Rec (50%) | $31 | $42 | $14 | $29 |
| Rec (70%) | $23 | $38 | $12 | $25 |
| BTF-ACI (50%) | $41 | $46 | $18 | $33 |
| BTF-ACI (70%) | $33 | $53 | $16 | $35 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** 0%

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (50%) | 100% | 0% | 0% | 88% | 0% | 13% | 90% | 0% | 10% | 56% | 0% | 44% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 58% | 0% | 42% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Floor (70%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 94% | 0% | 6% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (70%) | 94% | 0% | 6% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 94% | 0% | 6% | 75% | 0% | 25% | 90% | 0% | 10% | 44% | 0% | 56% |
| BTF-ACI (70%) | 94% | 0% | 6% | 88% | 0% | 13% | 90% | 0% | 10% | 46% | 0% | 54% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 23 |
| BTF-ACI (70%) | 0 | 0 | 0 | 20 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 42 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 1 | 0 | 0 | 13 |
| Floor (70%) | 1 | 0 | 0 | 13 |
| Rec (50%) | 2 | 0 | 0 | 13 |
| Rec (70%) | 2 | 0 | 0 | 13 |
| BTF-ACI (50%) | 2 | 0 | 0 | 20 |
| BTF-ACI (70%) | 2 | 0 | 0 | 20 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 21% |
| BTF-ACI (70%) | 0% | 0% | 0% | 18% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 12% |
| Floor (70%) | 6% | 0% | 0% | 12% |
| Rec (50%) | 11% | 0% | 0% | 12% |
| Rec (70%) | 11% | 0% | 0% | 12% |
| BTF-ACI (50%) | 11% | 0% | 0% | 18% |
| BTF-ACI (70%) | 11% | 0% | 0% | 18% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 59,780 | 62,950 | 2% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 51,040 | 54,210 | 2% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **0%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Floor (70%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Rec (50%) | 28,490 | 0 | 3,170 | 111,330 | 142,990 | 4% |
| Rec (70%) | 28,490 | 0 | 3,170 | 111,330 | 142,990 | 4% |
| BTF-ACI (50%) | 28,490 | 7,380 | 3,170 | 170,050 | 209,090 | 6% |
| BTF-ACI (70%) | 28,490 | 2,730 | 3,170 | 170,050 | 204,440 | 6% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED SHORT-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** 0%

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 182 | 182 | 262 | 262 |
| Floor (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| BTF-ACI (50%) | 0 | 0 | 0 | 3 | 0 | 0 | 147 | 260 | 147 | 263 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 252 | 139 | 252 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED LONG-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **0%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 345 | 408 | 425 | 488 |
| Floor (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Floor (70%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Rec (50%) | 42 | 42 | 0 | 0 | 0 | 0 | 98 | 116 | 140 | 158 |
| Rec (70%) | 42 | 42 | 0 | 0 | 0 | 0 | 98 | 116 | 140 | 158 |
| BTF-ACI (50%) | 42 | 42 | 0 | 5 | 0 | 0 | 124 | 164 | 166 | 211 |
| BTF-ACI (70%) | 42 | 42 | 0 | 3 | 0 | 0 | 124 | 132 | 166 | 177 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 31 | 5 | 128 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 84 | 8 | 156 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **10** | **20** | **121** | **15** | 300 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 96 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 7 | 76 | 7 | 130 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **94** | **9** | **16** | **109** | **14** | 242 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 37 | 5 | 138 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 98 | 8 | 175 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **13** | **26** | **141** | **15** | 329 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 90 | 7 | 149 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **94** | **11** | **23** | **128** | **14** | 270 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 8 | 22 | 83 | 13 | 225 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 14 | 35 | 185 | 24 | 342 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **190** | **22** | **59** | **273** | **39** | 583 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 74 | 13 | 194 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 170 | 22 | 308 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **152** | **23** | **56** | **249** | **37** | 518 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **0%**
(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $0 | $0 | $0 | $0 |
| Floor (70%) | $0 | $0 | $0 | $0 |
| Rec (50%) | $0 | $0 | $0 | $0 |
| Rec (70%) | $0 | $0 | $0 | $0 |
| BTF-ACI (50%) | $0 | $0 | $0 | $0 |
| BTF-ACI (70%) | $0 | $0 | $0 | $0 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 18% | 9% | 42% | 21% | 9% | 13% | 13% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 46% | 13% | 35% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Floor (70%) | 33% | 18% | 30% | 15% | 3% | 13% | 38% | 38% | 13% | 0% | 85% | 5% | 10% | 0% | 0% | 46% | 19% | 29% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| Rec (50%) | 15% | 12% | 39% | 21% | 12% | 0% | 0% | 75% | 25% | 0% | 80% | 15% | 5% | 0% | 0% | 40% | 13% | 40% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Rec (70%) | 30% | 18% | 27% | 18% | 6% | 0% | 0% | 88% | 13% | 0% | 85% | 10% | 5% | 0% | 0% | 40% | 17% | 37% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| BTF-ACI (50%) | 6% | 3% | 33% | 33% | 24% | 0% | 0% | 63% | 13% | 25% | 70% | 25% | 5% | 0% | 0% | 21% | 21% | 46% | 6% | 6% | 24% | 14% | 38% | 10% | 14% |
| BTF-ACI (70%) | 24% | 9% | 18% | 33% | 15% | 0% | 0% | 63% | 25% | 13% | 70% | 25% | 5% | 0% | 0% | 23% | 25% | 40% | 6% | 6% | 33% | 10% | 33% | 10% | 14% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES**
**(percentage of permitted combustion systems; see Note 3)**

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 48% | 21% | 30% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 13% | 19% | 4% | 12% |
| Floor (70%) | 64% | 18% | 18% | 0% | 0% | 38% | 50% | 13% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 56% | 12% | 17% | 8% | 8% |
| Rec (50%) | 48% | 21% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 12% | 17% | 4% | 15% |
| Rec (70%) | 52% | 30% | 18% | 0% | 0% | 0% | 63% | 38% | 0% | 0% | 90% | 0% | 5% | 0% | 5% | 56% | 10% | 15% | 8% | 12% |
| BTF-ACI (50%) | 27% | 27% | 45% | 0% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 40% | 13% | 23% | 12% | 12% |
| BTF-ACI (70%) | 39% | 30% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 44% | 15% | 19% | 10% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **0%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule |
| | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | |
| Floor (50%) | ($21) | -15% | 69% | ($30) | -34% | 43% | ($14) | -3% | 56% | ($28) | -7% | 60% |
| Floor (70%) | ($13) | -9% | 73% | ($24) | -27% | 47% | ($11) | -3% | 57% | ($24) | -7% | 61% |
| Rec (50%) | ($21) | -15% | 69% | ($42) | -47% | 34% | ($14) | -3% | 56% | ($29) | -8% | 60% |
| Rec (70%) | ($14) | -10% | 72% | ($38) | -43% | 37% | ($12) | -3% | 57% | ($25) | -7% | 61% |
| BTF-ACI (50%) | ($45) | -32% | 55% | ($46) | -46% | 40% | ($18) | -4% | 56% | ($33) | -8% | 63% |
| BTF-ACI (70%) | ($34) | -24% | 61% | ($53) | -60% | 26% | ($16) | -4% | 56% | ($35) | -9% | 62% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 31 | 5 | 128 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 59 | 29 | 132 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 83 | 8 | 155 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **16** | **34** | **176** | **43** | 423 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 96 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 57 | 29 | 131 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 8 | 76 | 7 | 130 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **113** | **15** | **30** | **164** | **42** | 364 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 37 | 5 | 138 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 56 | 29 | 130 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 98 | 8 | 175 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **19** | **40** | **195** | **43** | 450 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 55 | 29 | 128 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 90 | 7 | 150 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **113** | **17** | **37** | **182** | **42** | 391 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 8 | 22 | 81 | 13 | 223 |
| CEMs/Monitoring Equipment | 25 | 5 | 15 | 57 | 29 | 130 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 14 | 35 | 182 | 24 | 339 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **209** | **27** | **73** | **323** | **67** | 700 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 69 | 13 | 189 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 56 | 29 | 131 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 159 | 22 | 297 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **171** | **29** | **71** | **288** | **65** | 625 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH**

**Price pass through assumed:** **25%**

(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $5 | $5 | $5 | $5 |
| Floor (70%) | $4 | $4 | $4 | $4 |
| Rec (50%) | $5 | $5 | $5 | $5 |
| Rec (70%) | $4 | $4 | $4 | $4 |
| BTF-ACI (50%) | $12 | $12 | $9 | $10 |
| BTF-ACI (70%) | $9 | $9 | $7 | $8 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 15% | 9% | 39% | 24% | 12% | 0% | 25% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 33% | 21% | 37% | 6% | 4% | 24% | 14% | 43% | 10% | 10% |
| Floor (70%) | 30% | 9% | 36% | 21% | 3% | 13% | 13% | 50% | 25% | 0% | 85% | 5% | 10% | 0% | 0% | 38% | 25% | 27% | 6% | 4% | 33% | 14% | 33% | 5% | 14% |
| Rec (50%) | 3% | 21% | 36% | 21% | 18% | 0% | 0% | 75% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 27% | 19% | 48% | 0% | 6% | 24% | 14% | 43% | 10% | 10% |
| Rec (70%) | 27% | 12% | 30% | 24% | 6% | 0% | 0% | 75% | 25% | 0% | 85% | 10% | 5% | 0% | 0% | 33% | 23% | 38% | 2% | 4% | 33% | 14% | 33% | 5% | 14% |
| BTF-ACI (50%) | 3% | 6% | 30% | 30% | 30% | 0% | 0% | 38% | 38% | 25% | 60% | 30% | 10% | 0% | 0% | 13% | 25% | 46% | 8% | 8% | 19% | 10% | 33% | 24% | 14% |
| BTF-ACI (70%) | 21% | 6% | 15% | 36% | 21% | 0% | 0% | 38% | 50% | 13% | 70% | 25% | 5% | 0% | 0% | 15% | 31% | 38% | 10% | 6% | 24% | 14% | 24% | 19% | 19% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Short Term | | Long Term | |
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 2% | 33% | 8% | 46% |
| BTF-ACI (70%) | 0% | 6% | 0% | 25% | 10% | 10% | 2% | 31% | 8% | 46% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **25%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $24 | $3 | $7 | $27 | $7 | $68 | -18% |
| Floor (70%) | $16 | $3 | $6 | $23 | $7 | $55 | -20% |
| Rec (50%) | $26 | $4 | $7 | $28 | $7 | $72 | -19% |
| Rec (70%) | $19 | $4 | $6 | $25 | $7 | $60 | -21% |
| BTF-ACI (50%) | $34 | $4 | $10 | $43 | $27 | $118 | -18% |
| BTF-ACI (70%) | $27 | $5 | $9 | $40 | $26 | $107 | -18% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM
ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **25%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | $6.03 |
| BTF-ACI (70%) | $6.03 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

## TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS AFTER COMBUSTION SYSTEM CONSOLIDATIONS
## (millions)
## (Includes Cost of Waste Diversion)

**Price pass through assumed:** 25%

| Option | Total |
|---|---|
| Floor (50%) | $68 |
| Floor (70%) | $55 |
| Rec (50%) | $72 |
| Rec (70%) | $61 |
| BTF-ACI (50%) | $124 |
| BTF-ACI (70%) | $113 |

**Notes:**

1. Compliance costs after consolidation include the costs for those systems that will continue to burn waste, as well as the shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning wastes on-site. Other types of combustion systems that stop burning wastes do not incur compliance costs and therefore are excluded.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specfic firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION

**Price pass through assumed:** **25%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $728,353 | $312,665 | $298,694 | $306,987 | $281,064 |
| Floor (70%) | $495,465 | $265,102 | $268,924 | $265,247 | $261,146 |
| Rec (50%) | $773,990 | $394,025 | $303,414 | $322,844 | $281,064 |
| Rec (70%) | $578,418 | $360,261 | $277,499 | $282,653 | $261,146 |
| BTF-ACI (50%) | $1,043,019 | $477,964 | $426,560 | $561,122 | $1,061,809 |
| BTF-ACI (70%) | $818,226 | $464,470 | $403,222 | $513,964 | $1,042,619 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON**
**(Short Term - After Consolidation)**

**Price pass through assumed:** **25%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $31 | $37 | $17 | $36 |
| Floor (70%) | $23 | $31 | $14 | $32 |
| Rec (50%) | $33 | $49 | $17 | $36 |
| Rec (70%) | $26 | $45 | $15 | $33 |
| BTF-ACI (50%) | $44 | $51 | $21 | $39 |
| BTF-ACI (70%) | $35 | $59 | $19 | $36 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (50%) | 100% | 0% | 0% | 88% | 0% | 13% | 90% | 0% | 10% | 56% | 0% | 44% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 56% | 0% | 44% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Floor (70%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 94% | 0% | 6% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (70%) | 94% | 0% | 6% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 94% | 0% | 6% | 75% | 0% | 25% | 90% | 0% | 10% | 46% | 0% | 54% |
| BTF-ACI (70%) | 94% | 0% | 6% | 88% | 0% | 13% | 90% | 0% | 10% | 48% | 0% | 52% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 23 |
| BTF-ACI (70%) | 0 | 0 | 0 | 23 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 21% |
| BTF-ACI (70%) | 0% | 0% | 0% | 21% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 12% |
| Floor (70%) | 6% | 0% | 0% | 12% |
| Rec (50%) | 11% | 0% | 0% | 12% |
| Rec (70%) | 11% | 0% | 0% | 12% |
| BTF-ACI (50%) | 11% | 0% | 0% | 18% |
| BTF-ACI (70%) | 11% | 0% | 0% | 15% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 59,780 | 62,950 | 2% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 59,780 | 62,950 | 2% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Floor (70%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Rec (50%) | 28,490 | 0 | 3,170 | 111,330 | 142,990 | 4% |
| Rec (70%) | 28,490 | 0 | 3,170 | 111,330 | 142,990 | 4% |
| BTF-ACI (50%) | 28,490 | 7,380 | 3,170 | 170,050 | 209,090 | 6% |
| BTF-ACI (70%) | 28,490 | 2,730 | 3,170 | 123,210 | 157,600 | 5% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED LONG-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 345 | 408 | 425 | 488 |
| Floor (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Floor (70%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Rec (50%) | 42 | 42 | 0 | 0 | 0 | 0 | 98 | 116 | 140 | 158 |
| Rec (70%) | 42 | 42 | 0 | 0 | 0 | 0 | 98 | 116 | 140 | 158 |
| BTF-ACI (50%) | 42 | 42 | 0 | 5 | 0 | 0 | 124 | 132 | 166 | 179 |
| BTF-ACI (70%) | 42 | 42 | 0 | 3 | 0 | 0 | 106 | 124 | 148 | 169 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 31 | 5 | 128 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 59 | 29 | 132 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 83 | 8 | 155 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **16** | **34** | **176** | **43** | 423 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 96 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 57 | 29 | 131 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 8 | 76 | 7 | 130 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **113** | **15** | **30** | **164** | **42** | 364 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 37 | 5 | 138 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 56 | 29 | 130 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 98 | 8 | 175 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **19** | **40** | **195** | **43** | 450 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 55 | 29 | 128 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 90 | 7 | 150 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **113** | **17** | **37** | **182** | **42** | 391 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 8 | 22 | 81 | 13 | 223 |
| CEMs/Monitoring Equipment | 25 | 5 | 15 | 57 | 29 | 130 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 14 | 35 | 182 | 24 | 339 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **209** | **27** | **73** | **323** | **67** | 700 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 69 | 13 | 189 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 56 | 29 | 131 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 159 | 22 | 297 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **171** | **29** | **71** | **288** | **65** | 625 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $5 | $5 | $5 | $5 |
| Floor (70%) | $4 | $4 | $4 | $4 |
| Rec (50%) | $5 | $5 | $5 | $5 |
| Rec (70%) | $4 | $4 | $4 | $4 |
| BTF-ACI (50%) | $12 | $12 | $9 | $10 |
| BTF-ACI (70%) | $9 | $9 | $7 | $8 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 15% | 9% | 39% | 24% | 12% | 0% | 25% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 33% | 21% | 37% | 6% | 4% | 24% | 14% | 43% | 10% | 10% |
| Floor (70%) | 30% | 9% | 36% | 21% | 3% | 13% | 13% | 50% | 25% | 0% | 85% | 5% | 10% | 0% | 0% | 38% | 25% | 27% | 6% | 4% | 33% | 14% | 33% | 5% | 14% |
| Rec (50%) | 3% | 21% | 36% | 21% | 18% | 0% | 0% | 75% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 27% | 19% | 48% | 0% | 6% | 24% | 14% | 43% | 10% | 10% |
| Rec (70%) | 27% | 12% | 30% | 24% | 6% | 0% | 0% | 75% | 25% | 0% | 85% | 10% | 5% | 0% | 0% | 33% | 23% | 38% | 2% | 4% | 33% | 14% | 33% | 5% | 14% |
| BTF-ACI (50%) | 3% | 6% | 30% | 30% | 30% | 0% | 0% | 38% | 38% | 25% | 60% | 30% | 10% | 0% | 0% | 13% | 25% | 46% | 8% | 8% | 19% | 10% | 33% | 24% | 14% |
| BTF-ACI (70%) | 21% | 6% | 15% | 36% | 21% | 0% | 0% | 38% | 50% | 13% | 70% | 25% | 5% | 0% | 0% | 15% | 31% | 38% | 10% | 6% | 24% | 14% | 24% | 19% | 19% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 39% | 30% | 30% | 0% | 0% | 13% | 50% | 38% | 0% | 0% | 90% | 0% | 0% | 0% | 10% | 48% | 13% | 10% | 15% | 13% |
| Floor (70%) | 61% | 18% | 21% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 10% | 19% | 10% |
| Rec (50%) | 39% | 30% | 30% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 48% | 13% | 12% | 12% | 15% |
| Rec (70%) | 52% | 27% | 21% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 12% | 15% | 12% |
| BTF-ACI (50%) | 24% | 27% | 45% | 3% | 0% | 0% | 13% | 63% | 25% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 10% | 19% | 23% | 12% |
| BTF-ACI (70%) | 36% | 24% | 36% | 3% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 21% | 12% | 19% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **25%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule |
| | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | |
| Floor (50%) | ($16) | -14% | 69% | ($31) | -38% | 40% | ($12) | -4% | 56% | ($30) | -9% | 59% |
| Floor (70%) | ($11) | -10% | 73% | ($27) | -33% | 43% | ($11) | -3% | 57% | ($28) | -8% | 60% |
| Rec (50%) | ($16) | -14% | 69% | ($43) | -51% | 32% | ($12) | -4% | 56% | ($31) | -9% | 59% |
| Rec (70%) | ($12) | -11% | 72% | ($41) | -48% | 34% | ($11) | -3% | 56% | ($29) | -8% | 60% |
| BTF-ACI (50%) | ($36) | -30% | 56% | ($39) | -44% | 41% | ($9) | -4% | 56% | ($27) | -8% | 63% |
| BTF-ACI (70%) | ($26) | -22% | 63% | ($51) | -60% | 25% | ($10) | -4% | 56% | ($27) | -8% | 63% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.

## LIST OF EXHIBITS

**(25% Price Pass-Through; PM CEM Option 2: Not Required for Any Facilities)**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL COMPLIANCE COSTS (millions)**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites | Total |
|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $7 | $33 | $4 | $69 |
| Floor (70%) | $15 | $2 | $6 | $28 | $4 | $55 |
| Rec (50%) | $24 | $3 | $7 | $37 | $4 | $75 |
| Rec (70%) | $17 | $3 | $6 | $32 | $4 | $63 |
| BTF-ACI (50%) | $33 | $5 | $10 | $59 | $24 | $130 |
| BTF-ACI (70%) | $25 | $4 | $9 | $54 | $24 | $116 |

**Notes:**

1. Estimates assume that all facilities comply. Facilities non-viable in the baseline are included.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $677,373 | $260,252 | $267,273 | $237,552 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $238,749 | $203,763 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $267,634 | $265,811 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $242,210 | $234,073 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $379,459 | $429,193 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $356,234 | $392,281 | $941,121 |

**Notes:**

## AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER TON
## (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL BASELINE COST OF BURNING WASTE AND COMPLIANCE COSTS PER TON OF HAZARDOUS WASTE BURNED (Before Consolidation)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Baseline** | $74 | $114 | $658 | $36,325 |
| **Compliance Costs** | | | | |
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. On-site incinerator baseline and compliance costs per ton are high due to the large number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger quantities of hazardous waste compliance costs per ton would actually be lower. If facilities are burning large volumes of non hazardous waste in addition to the hazardous waste, baseline costs per ton would be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**BASELINE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED**
**(Number of Combustion systems Falling in Range)**

| | <$0 | $0 - $50 | $51 - $100 | $101 - $150 | >$150 |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 8 | 15 | 10 |
| LWA Kilns | 0 | 0 | 8 | 3 | 0 |
| Commercial Incinerators | 3 | 1 | 1 | 1 | 20 |
| On-site Incinerators | 48 | 13 | 11 | 11 | 56 |

**BASELINE OPERATING PROFITS AS A PERCENTAGE OF BASELINE WEIGHTED AVERAGE PRICES PER TON**
**(Number of Combustion systems Falling in Range)**

| | <0% | 0% - 10% | 11% - 25% | 26% - 50% | >50% |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 0 | 2 | 31 |
| LWA Kilns | 0 | 0 | 0 | 0 | 10 |
| Commercial Incinerators | 3 | 0 | 3 | 8 | 13 |
| On-site Incinerators | 48 | 8 | 24 | 19 | 40 |

**Notes:**

1. Baseline Operating Profits = (weighted average price per ton + weighted average energy savings per ton) - total annual baseline costs per ton. Total annual baseline costs include fixed annual capital costs, fixed annual operating and maintenance costs, and annual variable costs.
2. Baseline operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Number of systems with average operating profits less than $0 (or <0%) includes those burning very little or no waste.
4. Baseline operating profits are calculated at the system level. Consolidating burning into fewer systems may reduce facility closures, explaining why the system estimates presented in this exhibit appear higher than the facility closure presented in later exhibits.
5. Includes combustion systems not currently burning waste in the cement kiln, LWAK, and commercial incinerator sectors; or burning less than 50 tons per year in the on-site incinerator sector.

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 33% | 27% | 33% | 27% | 61% | 52% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 45% | 36% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 45% | 33% | 45% | 33% | 39% | 30% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 3% | 3% | 3% | 3% | 0% | 0% |
| Fabric Filter DOM, mod | 9% | 6% | 9% | 6% | 6% | 6% |
| DESP DOM, small | 6% | 0% | 6% | 0% | 3% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 3% | 3% | 3% | 3% | 3% | 3% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 55% | 42% | 64% | 52% | 73% | 55% |
| None | 12% | 27% | 3% | 21% | 3% | 18% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 63% | 50% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 63% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 88% | 88% | 88% | 88% | 50% | 50% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 25% | 13% | 25% | 13% | 13% | 0% |
| Fabric Filter DOM, mod | 13% | 0% | 13% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 75% | 75% | 75% | 75% |
| Feed Control | 100% | 75% | 63% | 63% | 50% | 63% |
| None | 0% | 13% | 0% | 0% | 0% | 0% |

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 15% | 10% | 15% | 15% | 40% | 40% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 20% | 20% | 85% | 85% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 55% | 50% | 45% | 40% | 20% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 5% | 5% | 35% | 35% |
| Fabric Filter DOM, small | 5% | 5% | 5% | 5% | 5% | 5% |
| Fabric Filter DOM, mod | 10% | 5% | 10% | 5% | 10% | 5% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 5% | 0% | 5% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 0% | 0% |
| HEWS DOM, small | 0% | 5% | 0% | 5% | 0% | 0% |
| HEWS DOM, mod | 15% | 10% | 15% | 10% | 5% | 5% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 5% | 0% | 5% | 0% | 5% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 85% | 80% | 80% | 75% | 70% | 65% |
| None | 5% | 5% | 5% | 5% | 5% | 5% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 67% | 65% | 71% | 69% | 85% | 81% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 15% | 15% | 71% | 60% |
| New Carbon Bed | 0% | 0% | 2% | 2% | 6% | 6% |
| New Quencher | 17% | 17% | 12% | 12% | 10% | 10% |
| New Afterburner | 6% | 2% | 6% | 2% | 6% | 2% |
| New Reheater | 0% | 0% | 8% | 8% | 60% | 48% |
| Fabric Filter DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| Fabric Filter DOM, mod | 2% | 0% | 2% | 0% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| HEWS DOM, mod | 10% | 10% | 8% | 8% | 2% | 2% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 4% | 2% | 4% | 2% | 4% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 46% | 40% | 42% | 37% | 42% | 52% |
| None | 6% | 8% | 4% | 6% | 2% | 2% |
| **Government On-site Incinerators** | | | | | | |
| New Fabric Filters | 29% | 24% | 29% | 24% | 38% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 48% | 43% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 5% |
| New Afterburner | 5% | 5% | 5% | 5% | 5% | 5% |
| New Reheater | 0% | 0% | 0% | 0% | 19% | 19% |
| Fabric Filter DOM, small | 0% | 5% | 0% | 5% | 0% | 5% |
| Fabric Filter DOM, mod | 14% | 10% | 14% | 10% | 14% | 10% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 5% | 5% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 14% | 14% | 14% | 14% | 14% | 14% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 52% | 57% | 52% | 57% | 52% |
| None | 19% | 19% | 19% | 19% | 14% | 14% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | Short Term | | Long Term | |
| | | | | | | | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 10% | 23% | 12% | 42% |
| BTF-ACI (70%) | 0% | 6% | 0% | 13% | 10% | 10% | 12% | 21% | 12% | 42% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **25%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $6 | $22 | $4 | $57 | -17% |
| Floor (70%) | $15 | $2 | $5 | $18 | $4 | $44 | -20% |
| Rec (50%) | $24 | $3 | $6 | $23 | $4 | $61 | -19% |
| Rec (70%) | $17 | $3 | $5 | $20 | $4 | $50 | -21% |
| BTF-ACI (50%) | $33 | $5 | $9 | $41 | $24 | $111 | -15% |
| BTF-ACI (70%) | $25 | $4 | $8 | $37 | $24 | $98 | -16% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **25%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | $2.27 |
| BTF-ACI (70%) | $2.27 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS AFTER COMBUSTION SYSTEM CONSOLIDATIONS
(millions)
(Includes Cost of Waste Diversion)

**Price pass through assumed:** **25%**

| Option | Total |
|---|---|
| Floor (50%) | $57 |
| Floor (70%) | $44 |
| Rec (50%) | $61 |
| Rec (70%) | $50 |
| BTF-ACI (50%) | $113 |
| BTF-ACI (70%) | $100 |

**Notes:**

1. Compliance costs after consolidation include the costs for those systems that will continue to burn waste, as well as the shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning wastes on-site. Other types of combustion systems that stop burning wastes do not incur compliance costs and therefore are excluded.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specfic firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION**

**Price pass through assumed:** **25%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $677,373 | $260,252 | $243,257 | $251,839 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $213,488 | $210,100 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $247,977 | $267,697 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $222,062 | $227,506 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $371,123 | $510,754 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $347,785 | $465,008 | $941,121 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON**
**(Short Term - After Consolidation)**

**Price pass through assumed:** **25%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $14 | $28 |
| Floor (70%) | $21 | $24 | $11 | $24 |
| Rec (50%) | $31 | $42 | $14 | $29 |
| Rec (70%) | $23 | $38 | $12 | $25 |
| BTF-ACI (50%) | $41 | $60 | $18 | $38 |
| BTF-ACI (70%) | $33 | $53 | $16 | $35 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 58% | 0% | 42% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 58% | 0% | 42% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Floor (70%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 94% | 0% | 6% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (70%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 94% | 0% | 6% | 75% | 0% | 25% | 90% | 0% | 10% | 48% | 0% | 52% |
| BTF-ACI (70%) | 97% | 0% | 3% | 88% | 0% | 13% | 90% | 0% | 10% | 48% | 0% | 52% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 20 |
| BTF-ACI (70%) | 0 | 0 | 0 | 20 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed: 25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 42 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 1 | 0 | 0 | 13 |
| Floor (70%) | 1 | 0 | 0 | 13 |
| Rec (50%) | 2 | 0 | 0 | 13 |
| Rec (70%) | 1 | 0 | 0 | 13 |
| BTF-ACI (50%) | 2 | 0 | 0 | 16 |
| BTF-ACI (70%) | 1 | 0 | 0 | 16 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 18% |
| BTF-ACI (70%) | 0% | 0% | 0% | 18% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 12% |
| Floor (70%) | 6% | 0% | 0% | 12% |
| Rec (50%) | 11% | 0% | 0% | 12% |
| Rec (70%) | 6% | 0% | 0% | 12% |
| BTF-ACI (50%) | 11% | 0% | 0% | 15% |
| BTF-ACI (70%) | 6% | 0% | 0% | 15% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 51,040 | 54,210 | 2% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 51,040 | 54,210 | 2% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **25%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Floor (70%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Rec (50%) | 28,490 | 0 | 3,170 | 111,330 | 142,990 | 4% |
| Rec (70%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| BTF-ACI (50%) | 28,490 | 7,380 | 3,170 | 123,210 | 162,250 | 5% |
| BTF-ACI (70%) | 16,960 | 2,730 | 3,170 | 123,210 | 146,070 | 4% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED SHORT-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 182 | 182 | 262 | 262 |
| Floor (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| BTF-ACI (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 252 | 139 | 252 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 252 | 139 | 252 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED LONG-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **25%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 345 | 408 | 425 | 488 |
| Floor (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Floor (70%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Rec (50%) | 42 | 42 | 0 | 0 | 0 | 0 | 98 | 116 | 140 | 158 |
| Rec (70%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| BTF-ACI (50%) | 42 | 42 | 0 | 5 | 0 | 0 | 106 | 124 | 148 | 171 |
| BTF-ACI (70%) | 21 | 21 | 0 | 3 | 0 | 0 | 106 | 124 | 127 | 148 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 31 | 5 | 128 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 84 | 8 | 156 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **10** | **20** | **121** | **15** | 300 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 96 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 7 | 76 | 7 | 130 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **94** | **9** | **16** | **109** | **14** | 242 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**

**Price pass through assumed:** **25%**

(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 37 | 5 | 138 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 98 | 8 | 175 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **13** | **26** | **141** | **15** | 329 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 90 | 7 | 149 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **94** | **11** | **23** | **128** | **14** | 270 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 10 | 22 | 86 | 13 | 230 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 17 | 35 | 193 | 24 | 353 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **190** | **27** | **59** | **285** | **39** | 600 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 74 | 13 | 194 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 170 | 22 | 308 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **152** | **23** | **56** | **249** | **37** | 518 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **25%**
(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $5 | $5 | $4 | $5 |
| Floor (70%) | $3 | $3 | $3 | $3 |
| Rec (50%) | $5 | $5 | $4 | $5 |
| Rec (70%) | $4 | $4 | $3 | $3 |
| BTF-ACI (50%) | $11 | $11 | $8 | $9 |
| BTF-ACI (70%) | $8 | $8 | $7 | $7 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 18% | 9% | 42% | 21% | 9% | 13% | 13% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 46% | 13% | 35% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Floor (70%) | 33% | 18% | 30% | 15% | 3% | 13% | 38% | 38% | 13% | 0% | 85% | 5% | 10% | 0% | 0% | 46% | 19% | 29% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| Rec (50%) | 15% | 12% | 39% | 21% | 12% | 0% | 0% | 75% | 25% | 0% | 80% | 15% | 5% | 0% | 0% | 40% | 13% | 40% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Rec (70%) | 30% | 18% | 27% | 18% | 6% | 0% | 0% | 88% | 13% | 0% | 85% | 10% | 5% | 0% | 0% | 40% | 17% | 37% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| BTF-ACI (50%) | 6% | 3% | 33% | 33% | 24% | 0% | 0% | 63% | 13% | 25% | 70% | 25% | 5% | 0% | 0% | 21% | 21% | 46% | 6% | 6% | 24% | 14% | 38% | 10% | 14% |
| BTF-ACI (70%) | 24% | 9% | 18% | 33% | 15% | 0% | 0% | 63% | 25% | 13% | 70% | 25% | 5% | 0% | 0% | 23% | 25% | 40% | 6% | 6% | 33% | 10% | 33% | 10% | 14% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 48% | 21% | 30% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 13% | 19% | 4% | 12% |
| Floor (70%) | 64% | 18% | 18% | 0% | 0% | 38% | 50% | 13% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 56% | 12% | 17% | 8% | 8% |
| Rec (50%) | 48% | 21% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 12% | 17% | 4% | 15% |
| Rec (70%) | 52% | 30% | 18% | 0% | 0% | 0% | 63% | 38% | 0% | 0% | 90% | 0% | 5% | 0% | 5% | 56% | 10% | 15% | 8% | 12% |
| BTF-ACI (50%) | 27% | 27% | 45% | 0% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 40% | 13% | 23% | 12% | 12% |
| BTF-ACI (70%) | 39% | 30% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 44% | 15% | 19% | 10% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **25%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule |
| | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | |
| Floor (50%) | ($15) | -14% | 70% | ($25) | -31% | 45% | ($9) | -3% | 57% | ($23) | -7% | 61% |
| Floor (70%) | ($10) | -9% | 74% | ($21) | -25% | 48% | ($8) | -2% | 57% | ($21) | -6% | 61% |
| Rec (50%) | ($15) | -14% | 70% | ($37) | -44% | 36% | ($9) | -3% | 57% | ($23) | -7% | 60% |
| Rec (70%) | ($11) | -10% | 73% | ($34) | -41% | 38% | ($8) | -2% | 57% | ($22) | -6% | 61% |
| BTF-ACI (50%) | ($34) | -29% | 57% | ($48) | -58% | 27% | ($7) | -3% | 57% | ($27) | -8% | 62% |
| BTF-ACI (70%) | ($25) | -22% | 63% | ($44) | -53% | 30% | ($7) | -3% | 57% | ($26) | -8% | 63% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.

# LIST OF EXHIBITS

## (75% Price Pass-Through; PM CEM Option 1: Required for All Facilities)

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL COMPLIANCE COSTS (millions)**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites | Total |
|---|---|---|---|---|---|---|
| Floor (50%) | $24 | $3 | $8 | $40 | $7 | $83 |
| Floor (70%) | $16 | $3 | $8 | $36 | $7 | $69 |
| Rec (50%) | $26 | $4 | $8 | $44 | $7 | $89 |
| Rec (70%) | $19 | $4 | $8 | $40 | $7 | $77 |
| BTF-ACI (50%) | $34 | $5 | $11 | $67 | $27 | $144 |
| BTF-ACI (70%) | $27 | $5 | $11 | $62 | $26 | $130 |

**Notes:**

1. Estimates assume that all facilities comply. Facilities non-viable in the baseline are included.

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM
## (Assuming no Market Exit)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $728,353 | $312,665 | $322,837 | $292,830 | $281,064 |
| Floor (70%) | $495,465 | $265,102 | $294,313 | $259,041 | $261,146 |
| Rec (50%) | $773,990 | $394,025 | $323,198 | $321,088 | $281,064 |
| Rec (70%) | $578,418 | $360,261 | $297,774 | $289,350 | $261,146 |
| BTF-ACI (50%) | $1,043,019 | $508,367 | $435,023 | $484,470 | $1,061,809 |
| BTF-ACI (70%) | $818,226 | $464,470 | $411,798 | $447,559 | $1,042,619 |

**Notes:**

## AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER TON
## (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $31 | $37 | $134 | $20,110 |
| Floor (70%) | $23 | $31 | $129 | $19,447 |
| Rec (50%) | $33 | $49 | $147 | $20,225 |
| Rec (70%) | $26 | $45 | $139 | $19,575 |
| BTF-ACI (50%) | $44 | $66 | $154 | $18,185 |
| BTF-ACI (70%) | $35 | $59 | $145 | $18,085 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL BASELINE COST OF BURNING WASTE AND COMPLIANCE COSTS PER TON OF HAZARDOUS WASTE BURNED (Before Consolidation)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Baseline** | $74 | $114 | $658 | $36,325 |
| **Compliance Costs** | | | | |
| Floor (50%) | $31 | $37 | $134 | $20,110 |
| Floor (70%) | $23 | $31 | $129 | $19,447 |
| Rec (50%) | $33 | $49 | $147 | $20,225 |
| Rec (70%) | $26 | $45 | $139 | $19,575 |
| BTF-ACI (50%) | $44 | $66 | $154 | $18,185 |
| BTF-ACI (70%) | $35 | $59 | $145 | $18,085 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. On-site incinerator baseline and compliance costs per ton are high due to the large number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger quantities of hazardous waste compliance costs per ton would actually be lower. If facilities are burning large volumes of non hazardous waste in addition to the hazardous waste, baseline costs per ton would be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**BASELINE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED**
**(Number of Combustion systems Falling in Range)**

| | <$0 | $0 - $50 | $51 - $100 | $101 - $150 | >$150 |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 8 | 15 | 10 |
| LWA Kilns | 0 | 0 | 8 | 3 | 0 |
| Commercial Incinerators | 3 | 1 | 1 | 1 | 20 |
| On-site Incinerators | 48 | 13 | 11 | 11 | 56 |

**BASELINE OPERATING PROFITS AS A PERCENTAGE OF BASELINE WEIGHTED AVERAGE PRICES PER TON**
**(Number of Combustion systems Falling in Range)**

| | <0% | 0% - 10% | 11% - 25% | 26% - 50% | >50% |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 0 | 2 | 31 |
| LWA Kilns | 0 | 0 | 0 | 0 | 10 |
| Commercial Incinerators | 3 | 0 | 3 | 8 | 13 |
| On-site Incinerators | 48 | 8 | 24 | 19 | 40 |

**Notes:**

1. Baseline Operating Profits = (weighted average price per ton + weighted average energy savings per ton) - total annual baseline costs per ton. Total annual baseline costs include fixed annual capital costs, fixed annual operating and maintenance costs, and annual variable costs.
2. Baseline operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Number of systems with average operating profits less than $0 (or <0%) includes those burning very little or no waste.
4. Baseline operating profits are calculated at the system level. Consolidating burning into fewer systems may reduce facility closures, explaining why the system estimates presented in this exhibit appear higher than the facility closure presented in later exhibits.
5. Includes combustion systems not currently burning waste in the cement kiln, LWAK, and commercial incinerator sectors; or burning less than 50 tons per year in the on-site incinerator sector.

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 33% | 27% | 33% | 27% | 61% | 52% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 45% | 36% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 45% | 33% | 45% | 33% | 39% | 30% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 3% | 3% | 3% | 3% | 0% | 0% |
| Fabric Filter DOM, mod | 9% | 6% | 9% | 6% | 6% | 6% |
| DESP DOM, small | 6% | 0% | 6% | 0% | 3% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 3% | 3% | 3% | 3% | 3% | 3% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 55% | 42% | 64% | 52% | 73% | 55% |
| None | 12% | 27% | 3% | 21% | 3% | 18% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 63% | 50% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 63% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 88% | 88% | 88% | 88% | 50% | 50% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 25% | 13% | 25% | 13% | 13% | 0% |
| Fabric Filter DOM, mod | 13% | 0% | 13% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 75% | 75% | 75% | 75% |
| Feed Control | 100% | 75% | 63% | 63% | 50% | 63% |
| None | 0% | 13% | 0% | 0% | 0% | 0% |

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 15% | 10% | 15% | 15% | 40% | 40% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 20% | 20% | 85% | 85% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 55% | 50% | 45% | 40% | 20% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 5% | 5% | 35% | 35% |
| Fabric Filter DOM, small | 5% | 5% | 5% | 5% | 5% | 5% |
| Fabric Filter DOM, mod | 10% | 5% | 10% | 5% | 10% | 5% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 5% | 0% | 5% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 0% | 0% |
| HEWS DOM, small | 0% | 5% | 0% | 5% | 0% | 0% |
| HEWS DOM, mod | 15% | 10% | 15% | 10% | 5% | 5% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 5% | 0% | 5% | 0% | 5% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 85% | 80% | 80% | 75% | 70% | 65% |
| None | 5% | 5% | 5% | 5% | 5% | 5% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 67% | 65% | 71% | 69% | 85% | 81% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 15% | 15% | 71% | 60% |
| New Carbon Bed | 0% | 0% | 2% | 2% | 6% | 6% |
| New Quencher | 17% | 17% | 12% | 12% | 10% | 10% |
| New Afterburner | 6% | 2% | 6% | 2% | 6% | 2% |
| New Reheater | 0% | 0% | 8% | 8% | 60% | 48% |
| Fabric Filter DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| Fabric Filter DOM, mod | 2% | 0% | 2% | 0% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| HEWS DOM, mod | 10% | 10% | 8% | 8% | 2% | 2% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 4% | 2% | 4% | 2% | 4% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 46% | 40% | 42% | 37% | 42% | 52% |
| None | 6% | 8% | 4% | 6% | 2% | 2% |
| **Government On-site Incinerators** | | | | | | |
| New Fabric Filters | 29% | 24% | 29% | 24% | 38% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 48% | 43% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 5% |
| New Afterburner | 5% | 5% | 5% | 5% | 5% | 5% |
| New Reheater | 0% | 0% | 0% | 0% | 19% | 19% |
| Fabric Filter DOM, small | 0% | 5% | 0% | 5% | 0% | 5% |
| Fabric Filter DOM, mod | 14% | 10% | 14% | 10% | 14% | 10% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 5% | 5% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 14% | 14% | 14% | 14% | 14% | 14% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 52% | 57% | 52% | 57% | 52% |
| None | 19% | 19% | 19% | 19% | 14% | 14% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | Short Term | | Long Term | |
| | | | | | | | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 2% | 33% | 8% | 46% |
| BTF-ACI (70%) | 0% | 6% | 0% | 25% | 10% | 10% | 2% | 31% | 8% | 46% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **75%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $24 | $3 | $7 | $27 | $7 | $68 | -18% |
| Floor (70%) | $16 | $3 | $6 | $23 | $7 | $55 | -20% |
| Rec (50%) | $26 | $4 | $7 | $28 | $7 | $72 | -19% |
| Rec (70%) | $19 | $4 | $6 | $25 | $7 | $60 | -21% |
| BTF-ACI (50%) | $34 | $5 | $10 | $48 | $27 | $124 | -14% |
| BTF-ACI (70%) | $27 | $5 | $9 | $44 | $26 | $111 | -15% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM
ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **75%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | $2.27 |
| BTF-ACI (70%) | $2.27 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

## TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS AFTER COMBUSTION SYSTEM CONSOLIDATIONS
## (millions)
## (Includes Cost of Waste Diversion)

**Price pass through assumed:** 75%

| Option | Total |
|---|---|
| Floor (50%) | $68 |
| Floor (70%) | $55 |
| Rec (50%) | $72 |
| Rec (70%) | $61 |
| BTF-ACI (50%) | $126 |
| BTF-ACI (70%) | $113 |

**Notes:**

1. Compliance costs after consolidation include the costs for those systems that will continue to burn waste, as well as the shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning wastes on-site. Other types of combustion systems that stop burning wastes do not incur compliance costs and therefore are excluded.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specfic firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION

**Price pass through assumed:** **75%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $728,353 | $312,665 | $298,694 | $306,987 | $281,064 |
| Floor (70%) | $495,465 | $265,102 | $268,924 | $265,247 | $261,146 |
| Rec (50%) | $773,990 | $394,025 | $303,414 | $322,844 | $281,064 |
| Rec (70%) | $578,418 | $360,261 | $277,499 | $282,653 | $261,146 |
| BTF-ACI (50%) | $1,043,019 | $508,367 | $426,560 | $562,538 | $1,061,809 |
| BTF-ACI (70%) | $818,226 | $464,470 | $403,222 | $514,958 | $1,042,619 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON
### (Short Term - After Consolidation)

**Price pass through assumed:** **75%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $31 | $37 | $17 | $36 |
| Floor (70%) | $23 | $31 | $14 | $32 |
| Rec (50%) | $33 | $49 | $17 | $36 |
| Rec (70%) | $26 | $45 | $15 | $33 |
| BTF-ACI (50%) | $44 | $66 | $21 | $49 |
| BTF-ACI (70%) | $35 | $59 | $19 | $45 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

PRELIMINARY ECONOMIC IMPACT RESULTS

PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION
(Percentage of combustion systems; includes systems currently burning below their break-even quantity)

**Price pass through assumed:** 75%

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 62% | 0% | 38% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 62% | 0% | 38% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 100% | 0% | 0% | 88% | 0% | 13% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (70%) | 100% | 0% | 0% | 88% | 0% | 13% | 90% | 0% | 10% | 50% | 0% | 50% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 20 |
| BTF-ACI (70%) | 0 | 0 | 0 | 20 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 42 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 1 | 0 | 0 | 13 |
| Floor (70%) | 0 | 0 | 0 | 13 |
| Rec (50%) | 1 | 0 | 0 | 13 |
| Rec (70%) | 0 | 0 | 0 | 13 |
| BTF-ACI (50%) | 0 | 0 | 0 | 13 |
| BTF-ACI (70%) | 0 | 0 | 0 | 13 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 18% |
| BTF-ACI (70%) | 0% | 0% | 0% | 18% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 12% |
| Floor (70%) | 0% | 0% | 0% | 12% |
| Rec (50%) | 6% | 0% | 0% | 12% |
| Rec (70%) | 0% | 0% | 0% | 12% |
| BTF-ACI (50%) | 0% | 0% | 0% | 12% |
| BTF-ACI (70%) | 0% | 0% | 0% | 12% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 51,040 | 54,210 | 2% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 51,040 | 54,210 | 2% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Floor (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| Rec (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Rec (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| BTF-ACI (70%) | 0 | 2,730 | 3,170 | 111,330 | 117,230 | 4% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED SHORT-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 182 | 182 | 262 | 262 |
| Floor (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| BTF-ACI (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 239 | 139 | 239 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 239 | 139 | 239 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED LONG-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 345 | 408 | 425 | 488 |
| Floor (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 116 | 98 | 116 |
| Rec (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 116 | 98 | 116 |
| BTF-ACI (50%) | 0 | 0 | 0 | 3 | 0 | 0 | 98 | 116 | 98 | 119 |
| BTF-ACI (70%) | 0 | 0 | 0 | 3 | 0 | 0 | 98 | 116 | 98 | 119 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 31 | 5 | 128 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 59 | 29 | 132 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 83 | 8 | 155 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **16** | **34** | **176** | **43** | 423 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 96 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 57 | 29 | 131 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 8 | 76 | 7 | 130 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **113** | **15** | **30** | **164** | **42** | 364 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 37 | 5 | 138 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 56 | 29 | 130 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 98 | 8 | 175 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **19** | **40** | **195** | **43** | 450 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 55 | 29 | 128 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 90 | 7 | 150 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **113** | **17** | **37** | **182** | **42** | 391 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 10 | 22 | 90 | 13 | 234 |
| CEMs/Monitoring Equipment | 25 | 6 | 15 | 63 | 29 | 137 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 17 | 35 | 201 | 24 | 361 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **209** | **33** | **73** | **358** | **67** | 740 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 77 | 13 | 197 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 62 | 29 | 137 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 176 | 22 | 314 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **171** | **29** | **71** | **319** | **65** | 655 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $16 | $16 | $15 | $15 |
| Floor (70%) | $11 | $11 | $11 | $11 |
| Rec (50%) | $16 | $16 | $15 | $15 |
| Rec (70%) | $12 | $12 | $12 | $12 |
| BTF-ACI (50%) | $36 | $36 | $28 | $30 |
| BTF-ACI (70%) | $26 | $26 | $22 | $23 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 15% | 9% | 39% | 24% | 12% | 0% | 25% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 33% | 21% | 37% | 6% | 4% | 24% | 14% | 43% | 10% | 10% |
| Floor (70%) | 30% | 9% | 36% | 21% | 3% | 13% | 13% | 50% | 25% | 0% | 85% | 5% | 10% | 0% | 0% | 38% | 25% | 27% | 6% | 4% | 33% | 14% | 33% | 5% | 14% |
| Rec (50%) | 3% | 21% | 36% | 21% | 18% | 0% | 0% | 75% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 27% | 19% | 48% | 0% | 6% | 24% | 14% | 43% | 10% | 10% |
| Rec (70%) | 27% | 12% | 30% | 24% | 6% | 0% | 0% | 75% | 25% | 0% | 85% | 10% | 5% | 0% | 0% | 33% | 23% | 38% | 2% | 4% | 33% | 14% | 33% | 5% | 14% |
| BTF-ACI (50%) | 3% | 6% | 30% | 30% | 30% | 0% | 0% | 38% | 38% | 25% | 60% | 30% | 10% | 0% | 0% | 13% | 25% | 46% | 8% | 8% | 19% | 10% | 33% | 24% | 14% |
| BTF-ACI (70%) | 21% | 6% | 15% | 36% | 21% | 0% | 0% | 38% | 50% | 13% | 70% | 25% | 5% | 0% | 0% | 15% | 31% | 38% | 10% | 6% | 24% | 14% | 24% | 19% | 19% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES**
**(percentage of permitted combustion systems; see Note 3)**

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 39% | 30% | 30% | 0% | 0% | 13% | 50% | 38% | 0% | 0% | 90% | 0% | 0% | 0% | 10% | 48% | 13% | 10% | 15% | 13% |
| Floor (70%) | 61% | 18% | 21% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 10% | 19% | 10% |
| Rec (50%) | 39% | 30% | 30% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 48% | 13% | 12% | 12% | 15% |
| Rec (70%) | 52% | 27% | 21% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 12% | 15% | 12% |
| BTF-ACI (50%) | 24% | 27% | 45% | 3% | 0% | 0% | 13% | 63% | 25% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 10% | 19% | 23% | 12% |
| BTF-ACI (70%) | 36% | 24% | 36% | 3% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 21% | 12% | 19% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **75%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule |
| | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | |
| Floor (50%) | ($5) | -12% | 71% | ($20) | -31% | 44% | ($1) | -2% | 57% | ($19) | -8% | 60% |
| Floor (70%) | ($4) | -9% | 74% | ($19) | -28% | 46% | ($3) | -2% | 57% | ($21) | -7% | 60% |
| Rec (50%) | ($5) | -12% | 71% | ($32) | -43% | 36% | ($1) | -2% | 57% | ($20) | -8% | 60% |
| Rec (70%) | ($4) | -9% | 73% | ($32) | -42% | 37% | ($3) | -2% | 57% | ($21) | -8% | 60% |
| BTF-ACI (50%) | ($12) | -24% | 61% | ($31) | -48% | 34% | $14 | -1% | 58% | ($14) | -9% | 60% |
| BTF-ACI (70%) | ($9) | -18% | 66% | ($34) | -48% | 33% | $7 | -2% | 57% | ($19) | -9% | 60% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.

## LIST OF EXHIBITS

### (75% Price Pass-Through; PM CEM Option 2: Not Required for Any Facilities)

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL COMPLIANCE COSTS (millions)**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites | Total |
|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $7 | $33 | $4 | $69 |
| Floor (70%) | $15 | $2 | $6 | $28 | $4 | $55 |
| Rec (50%) | $24 | $3 | $7 | $37 | $4 | $75 |
| Rec (70%) | $17 | $3 | $6 | $32 | $4 | $63 |
| BTF-ACI (50%) | $33 | $5 | $10 | $59 | $24 | $130 |
| BTF-ACI (70%) | $25 | $4 | $9 | $54 | $24 | $116 |

**Notes:**

1. Estimates assume that all facilities comply. Facilities non-viable in the baseline are included.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $677,373 | $260,252 | $267,273 | $237,552 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $238,749 | $203,763 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $267,634 | $265,811 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $242,210 | $234,073 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $379,459 | $429,193 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $356,234 | $392,281 | $941,121 |

**Notes:**

## AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER TON
## (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL BASELINE COST OF BURNING WASTE AND COMPLIANCE COSTS PER TON OF HAZARDOUS WASTE BURNED (Before Consolidation)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Baseline** | $74 | $114 | $658 | $36,325 |
| **Compliance Costs** | | | | |
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. On-site incinerator baseline and compliance costs per ton are high due to the large number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger quantities of hazardous waste compliance costs per ton would actually be lower. If facilities are burning large volumes of non hazardous waste in addition to the hazardous waste, baseline costs per ton would be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**BASELINE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED**
**(Number of Combustion systems Falling in Range)**

| | <$0 | $0 - $50 | $51 - $100 | $101 - $150 | >$150 |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 8 | 15 | 10 |
| LWA Kilns | 0 | 0 | 8 | 3 | 0 |
| Commercial Incinerators | 3 | 1 | 1 | 1 | 20 |
| On-site Incinerators | 48 | 13 | 11 | 11 | 56 |

**BASELINE OPERATING PROFITS AS A PERCENTAGE OF BASELINE WEIGHTED AVERAGE PRICES PER TON**
**(Number of Combustion systems Falling in Range)**

| | <0% | 0% - 10% | 11% - 25% | 26% - 50% | >50% |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 0 | 2 | 31 |
| LWA Kilns | 0 | 0 | 0 | 0 | 10 |
| Commercial Incinerators | 3 | 0 | 3 | 8 | 13 |
| On-site Incinerators | 48 | 8 | 24 | 19 | 40 |

**Notes:**

1. Baseline Operating Profits = (weighted average price per ton + weighted average energy savings per ton) - total annual baseline costs per ton. Total annual baseline costs include fixed annual capital costs, fixed annual operating and maintenance costs, and annual variable costs.
2. Baseline operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Number of systems with average operating profits less than $0 (or <0%) includes those burning very little or no waste.
4. Baseline operating profits are calculated at the system level. Consolidating burning into fewer systems may reduce facility closures, explaining why the system estimates presented in this exhibit appear higher than the facility closure presented in later exhibits.
5. Includes combustion systems not currently burning waste in the cement kiln, LWAK, and commercial incinerator sectors; or burning less than 50 tons per year in the on-site incinerator sector.

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 33% | 27% | 33% | 27% | 61% | 52% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 45% | 36% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 45% | 33% | 45% | 33% | 39% | 30% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 3% | 3% | 3% | 3% | 0% | 0% |
| Fabric Filter DOM, mod | 9% | 6% | 9% | 6% | 6% | 6% |
| DESP DOM, small | 6% | 0% | 6% | 0% | 3% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 3% | 3% | 3% | 3% | 3% | 3% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 55% | 42% | 64% | 52% | 73% | 55% |
| None | 12% | 27% | 3% | 21% | 3% | 18% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 63% | 50% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 63% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 88% | 88% | 88% | 88% | 50% | 50% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 25% | 13% | 25% | 13% | 13% | 0% |
| Fabric Filter DOM, mod | 13% | 0% | 13% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 75% | 75% | 75% | 75% |
| Feed Control | 100% | 75% | 63% | 63% | 50% | 63% |
| None | 0% | 13% | 0% | 0% | 0% | 0% |

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 15% | 10% | 15% | 15% | 40% | 40% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 20% | 20% | 85% | 85% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 55% | 50% | 45% | 40% | 20% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 5% | 5% | 35% | 35% |
| Fabric Filter DOM, small | 5% | 5% | 5% | 5% | 5% | 5% |
| Fabric Filter DOM, mod | 10% | 5% | 10% | 5% | 10% | 5% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 5% | 0% | 5% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 0% | 0% |
| HEWS DOM, small | 0% | 5% | 0% | 5% | 0% | 0% |
| HEWS DOM, mod | 15% | 10% | 15% | 10% | 5% | 5% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 5% | 0% | 5% | 0% | 5% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 85% | 80% | 80% | 75% | 70% | 65% |
| None | 5% | 5% | 5% | 5% | 5% | 5% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 67% | 65% | 71% | 69% | 85% | 81% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 15% | 15% | 71% | 60% |
| New Carbon Bed | 0% | 0% | 2% | 2% | 6% | 6% |
| New Quencher | 17% | 17% | 12% | 12% | 10% | 10% |
| New Afterburner | 6% | 2% | 6% | 2% | 6% | 2% |
| New Reheater | 0% | 0% | 8% | 8% | 60% | 48% |
| Fabric Filter DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| Fabric Filter DOM, mod | 2% | 0% | 2% | 0% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| HEWS DOM, mod | 10% | 10% | 8% | 8% | 2% | 2% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 4% | 2% | 4% | 2% | 4% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 46% | 40% | 42% | 37% | 42% | 52% |
| None | 6% | 8% | 4% | 6% | 2% | 2% |
| **Government On-site Incinerators** | | | | | | |
| New Fabric Filters | 29% | 24% | 29% | 24% | 38% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 48% | 43% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 5% |
| New Afterburner | 5% | 5% | 5% | 5% | 5% | 5% |
| New Reheater | 0% | 0% | 0% | 0% | 19% | 19% |
| Fabric Filter DOM, small | 0% | 5% | 0% | 5% | 0% | 5% |
| Fabric Filter DOM, mod | 14% | 10% | 14% | 10% | 14% | 10% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 5% | 5% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 14% | 14% | 14% | 14% | 14% | 14% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 52% | 57% | 52% | 57% | 52% |
| None | 19% | 19% | 19% | 19% | 14% | 14% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | Short Term | | Long Term | |
| | | | | | | | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 10% | 23% | 12% | 42% |
| BTF-ACI (70%) | 0% | 6% | 0% | 13% | 10% | 10% | 12% | 21% | 12% | 42% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **75%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $6 | $22 | $4 | $58 | -17% |
| Floor (70%) | $15 | $2 | $5 | $18 | $4 | $44 | -20% |
| Rec (50%) | $24 | $3 | $6 | $24 | $4 | $61 | -19% |
| Rec (70%) | $17 | $3 | $5 | $20 | $4 | $50 | -21% |
| BTF-ACI (50%) | $33 | $5 | $9 | $44 | $24 | $114 | -13% |
| BTF-ACI (70%) | $25 | $4 | $8 | $40 | $24 | $101 | -13% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **75%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | -$0.73 |
| BTF-ACI (70%) | $0.19 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS AFTER COMBUSTION SYSTEM CONSOLIDATIONS
(millions)
(Includes Cost of Waste Diversion)

**Price pass through assumed:** **75%**

| Option | Total |
|---|---|
| Floor (50%) | $58 |
| Floor (70%) | $44 |
| Rec (50%) | $62 |
| Rec (70%) | $50 |
| BTF-ACI (50%) | $113 |
| BTF-ACI (70%) | $101 |

**Notes:**

1. Compliance costs after consolidation include the costs for those systems that will continue to burn waste, as well as the shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning wastes on-site. Other types of combustion systems that stop burning wastes do not incur compliance costs and therefore are excluded.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specfic firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION

**Price pass through assumed:** **75%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $677,373 | $260,252 | $243,257 | $248,774 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $213,488 | $210,100 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $247,977 | $264,165 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $222,062 | $227,506 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $371,123 | $502,744 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $347,785 | $456,605 | $941,121 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON**
**(Short Term - After Consolidation)**

**Price pass through assumed:** **75%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $14 | $28 |
| Floor (70%) | $21 | $24 | $11 | $24 |
| Rec (50%) | $31 | $42 | $14 | $29 |
| Rec (70%) | $23 | $38 | $12 | $25 |
| BTF-ACI (50%) | $41 | $60 | $18 | $47 |
| BTF-ACI (70%) | $33 | $53 | $16 | $43 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

PRELIMINARY ECONOMIC IMPACT RESULTS

PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION
(Percentage of combustion systems; includes systems currently burning below their break-even quantity)

**Price pass through assumed:** 75%

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 100% | 0% | 0% | 88% | 0% | 13% | 90% | 0% | 10% | 52% | 0% | 48% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 52% | 0% | 48% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 16 |
| BTF-ACI (70%) | 0 | 0 | 0 | 16 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 42 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 1 | 0 | 0 | 13 |
| Floor (70%) | 0 | 0 | 0 | 13 |
| Rec (50%) | 1 | 0 | 0 | 13 |
| Rec (70%) | 0 | 0 | 0 | 13 |
| BTF-ACI (50%) | 0 | 0 | 0 | 10 |
| BTF-ACI (70%) | 0 | 0 | 0 | 10 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 15% |
| BTF-ACI (70%) | 0% | 0% | 0% | 15% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 12% |
| Floor (70%) | 0% | 0% | 0% | 12% |
| Rec (50%) | 6% | 0% | 0% | 12% |
| Rec (70%) | 0% | 0% | 0% | 12% |
| BTF-ACI (50%) | 0% | 0% | 0% | 9% |
| BTF-ACI (70%) | 0% | 0% | 0% | 9% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 44,070 | 47,240 | 1% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **75%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Floor (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| Rec (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Rec (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 106,270 | 109,440 | 3% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 106,270 | 109,440 | 3% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED SHORT-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 182 | 182 | 262 | 262 |
| Floor (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| BTF-ACI (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED LONG-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **75%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 345 | 408 | 425 | 488 |
| Floor (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 116 | 98 | 116 |
| Rec (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 98 | 116 | 119 | 137 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 116 | 98 | 116 |
| BTF-ACI (50%) | 0 | 0 | 0 | 3 | 0 | 0 | 90 | 108 | 90 | 111 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 108 | 90 | 108 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 32 | 5 | 129 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 86 | 8 | 157 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **10** | **20** | **123** | **15** | 302 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 96 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 7 | 76 | 7 | 130 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **94** | **9** | **16** | **109** | **14** | 242 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 38 | 5 | 139 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 100 | 8 | 176 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **13** | **26** | **143** | **15** | 331 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 90 | 7 | 149 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **94** | **11** | **23** | **128** | **14** | 270 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 10 | 22 | 93 | 13 | 237 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 9 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 17 | 35 | 209 | 24 | 369 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **190** | **27** | **59** | **308** | **39** | 623 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 80 | 13 | 200 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 9 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 183 | 22 | 322 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **152** | **23** | **56** | **269** | **37** | 538 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **75%**
(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $15 | $15 | $13 | $14 |
| Floor (70%) | $10 | $10 | $9 | $9 |
| Rec (50%) | $15 | $15 | $13 | $14 |
| Rec (70%) | $11 | $11 | $10 | $10 |
| BTF-ACI (50%) | $34 | $34 | $25 | $28 |
| BTF-ACI (70%) | $25 | $25 | $20 | $22 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 18% | 9% | 42% | 21% | 9% | 13% | 13% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 46% | 13% | 35% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Floor (70%) | 33% | 18% | 30% | 15% | 3% | 13% | 38% | 38% | 13% | 0% | 85% | 5% | 10% | 0% | 0% | 46% | 19% | 29% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| Rec (50%) | 15% | 12% | 39% | 21% | 12% | 0% | 0% | 75% | 25% | 0% | 80% | 15% | 5% | 0% | 0% | 40% | 13% | 40% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Rec (70%) | 30% | 18% | 27% | 18% | 6% | 0% | 0% | 88% | 13% | 0% | 85% | 10% | 5% | 0% | 0% | 40% | 17% | 37% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| BTF-ACI (50%) | 6% | 3% | 33% | 33% | 24% | 0% | 0% | 63% | 13% | 25% | 70% | 25% | 5% | 0% | 0% | 21% | 21% | 46% | 6% | 6% | 24% | 14% | 38% | 10% | 14% |
| BTF-ACI (70%) | 24% | 9% | 18% | 33% | 15% | 0% | 0% | 63% | 25% | 13% | 70% | 25% | 5% | 0% | 0% | 23% | 25% | 40% | 6% | 6% | 33% | 10% | 33% | 10% | 14% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES**
**(percentage of permitted combustion systems; see Note 3)**

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 48% | 21% | 30% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 13% | 19% | 4% | 12% |
| Floor (70%) | 64% | 18% | 18% | 0% | 0% | 38% | 50% | 13% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 56% | 12% | 17% | 8% | 8% |
| Rec (50%) | 48% | 21% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 12% | 17% | 4% | 15% |
| Rec (70%) | 52% | 30% | 18% | 0% | 0% | 0% | 63% | 38% | 0% | 0% | 90% | 0% | 5% | 0% | 5% | 56% | 10% | 15% | 8% | 12% |
| BTF-ACI (50%) | 27% | 27% | 45% | 0% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 40% | 13% | 23% | 12% | 12% |
| BTF-ACI (70%) | 39% | 30% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 44% | 15% | 19% | 10% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **75%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule |
| | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | |
| Floor (50%) | ($5) | -12% | 71% | ($14) | -25% | 48% | $2 | -2% | 57% | ($13) | -6% | 60% |
| Floor (70%) | ($3) | -8% | 75% | ($14) | -22% | 51% | ($1) | -2% | 57% | ($14) | -5% | 62% |
| Rec (50%) | ($5) | -12% | 71% | ($26) | -37% | 41% | $1 | -2% | 57% | ($14) | -6% | 60% |
| Rec (70%) | ($4) | -8% | 74% | ($27) | -36% | 41% | ($1) | -2% | 57% | ($14) | -6% | 61% |
| BTF-ACI (50%) | ($11) | -23% | 62% | ($26) | -43% | 37% | $16 | -1% | 58% | ($13) | -8% | 60% |
| BTF-ACI (70%) | ($8) | -18% | 66% | ($27) | -42% | 38% | $10 | -1% | 58% | ($18) | -9% | 60% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.

## LIST OF EXHIBITS

### (100% Price Pass-Through; PM CEM Option 1: Required for All Facilities)

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL COMPLIANCE COSTS (millions)**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites | Total |
|---|---|---|---|---|---|---|
| Floor (50%) | $24 | $3 | $8 | $40 | $7 | $83 |
| Floor (70%) | $16 | $3 | $8 | $36 | $7 | $69 |
| Rec (50%) | $26 | $4 | $8 | $44 | $7 | $89 |
| Rec (70%) | $19 | $4 | $8 | $40 | $7 | $77 |
| BTF-ACI (50%) | $34 | $5 | $11 | $67 | $27 | $144 |
| BTF-ACI (70%) | $27 | $5 | $11 | $62 | $26 | $130 |

**Notes:**

1. Estimates assume that all facilities comply. Facilities non-viable in the baseline are included.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $728,353 | $312,665 | $322,837 | $292,830 | $281,064 |
| Floor (70%) | $495,465 | $265,102 | $294,313 | $259,041 | $261,146 |
| Rec (50%) | $773,990 | $394,025 | $323,198 | $321,088 | $281,064 |
| Rec (70%) | $578,418 | $360,261 | $297,774 | $289,350 | $261,146 |
| BTF-ACI (50%) | $1,043,019 | $508,367 | $435,023 | $484,470 | $1,061,809 |
| BTF-ACI (70%) | $818,226 | $464,470 | $411,798 | $447,559 | $1,042,619 |

**Notes:**

## AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER TON
## (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $31 | $37 | $134 | $20,110 |
| Floor (70%) | $23 | $31 | $129 | $19,447 |
| Rec (50%) | $33 | $49 | $147 | $20,225 |
| Rec (70%) | $26 | $45 | $139 | $19,575 |
| BTF-ACI (50%) | $44 | $66 | $154 | $18,185 |
| BTF-ACI (70%) | $35 | $59 | $145 | $18,085 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL BASELINE COST OF BURNING WASTE AND COMPLIANCE COSTS PER TON OF HAZARDOUS WASTE BURNED (Before Consolidation)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Baseline** | $74 | $114 | $658 | $36,325 |
| **Compliance Costs** | | | | |
| Floor (50%) | $31 | $37 | $134 | $20,110 |
| Floor (70%) | $23 | $31 | $129 | $19,447 |
| Rec (50%) | $33 | $49 | $147 | $20,225 |
| Rec (70%) | $26 | $45 | $139 | $19,575 |
| BTF-ACI (50%) | $44 | $66 | $154 | $18,185 |
| BTF-ACI (70%) | $35 | $59 | $145 | $18,085 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. On-site incinerator baseline and compliance costs per ton are high due to the large number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger quantities of hazardous waste compliance costs per ton would actually be lower. If facilities are burning large volumes of non hazardous waste in addition to the hazardous waste, baseline costs per ton would be lower.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### BASELINE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED
### (Number of Combustion systems Falling in Range)

| | <$0 | $0 - $50 | $51 - $100 | $101 - $150 | >$150 |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 8 | 15 | 10 |
| LWA Kilns | 0 | 0 | 8 | 3 | 0 |
| Commercial Incinerators | 3 | 1 | 1 | 1 | 20 |
| On-site Incinerators | 48 | 13 | 11 | 11 | 56 |

### BASELINE OPERATING PROFITS AS A PERCENTAGE OF BASELINE WEIGHTED AVERAGE PRICES PER TON
### (Number of Combustion systems Falling in Range)

| | <0% | 0% - 10% | 11% - 25% | 26% - 50% | >50% |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 0 | 2 | 31 |
| LWA Kilns | 0 | 0 | 0 | 0 | 10 |
| Commercial Incinerators | 3 | 0 | 3 | 8 | 13 |
| On-site Incinerators | 48 | 8 | 24 | 19 | 40 |

**Notes:**

1. Baseline Operating Profits = (weighted average price per ton + weighted average energy savings per ton) - total annual baseline costs per ton. Total annual baseline costs include fixed annual capital costs, fixed annual operating and maintenance costs, and annual variable costs.
2. Baseline operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Number of systems with average operating profits less than $0 (or <0%) includes those burning very little or no waste.
4. Baseline operating profits are calculated at the system level. Consolidating burning into fewer systems may reduce facility closures, explaining why the system estimates presented in this exhibit appear higher than the facility closure presented in later exhibits.
5. Includes combustion systems not currently burning waste in the cement kiln, LWAK, and commercial incinerator sectors; or burning less than 50 tons per year in the on-site incinerator sector.

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 33% | 27% | 33% | 27% | 61% | 52% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 45% | 36% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 45% | 33% | 45% | 33% | 39% | 30% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 3% | 3% | 3% | 3% | 0% | 0% |
| Fabric Filter DOM, mod | 9% | 6% | 9% | 6% | 6% | 6% |
| DESP DOM, small | 6% | 0% | 6% | 0% | 3% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 3% | 3% | 3% | 3% | 3% | 3% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 55% | 42% | 64% | 52% | 73% | 55% |
| None | 12% | 27% | 3% | 21% | 3% | 18% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 63% | 50% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 63% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 88% | 88% | 88% | 88% | 50% | 50% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 25% | 13% | 25% | 13% | 13% | 0% |
| Fabric Filter DOM, mod | 13% | 0% | 13% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 75% | 75% | 75% | 75% |
| Feed Control | 100% | 75% | 63% | 63% | 50% | 63% |
| None | 0% | 13% | 0% | 0% | 0% | 0% |

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 15% | 10% | 15% | 15% | 40% | 40% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 20% | 20% | 85% | 85% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 55% | 50% | 45% | 40% | 20% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 5% | 5% | 35% | 35% |
| Fabric Filter DOM, small | 5% | 5% | 5% | 5% | 5% | 5% |
| Fabric Filter DOM, mod | 10% | 5% | 10% | 5% | 10% | 5% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 5% | 0% | 5% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 0% | 0% |
| HEWS DOM, small | 0% | 5% | 0% | 5% | 0% | 0% |
| HEWS DOM, mod | 15% | 10% | 15% | 10% | 5% | 5% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 5% | 0% | 5% | 0% | 5% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 85% | 80% | 80% | 75% | 70% | 65% |
| None | 5% | 5% | 5% | 5% | 5% | 5% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 67% | 65% | 71% | 69% | 85% | 81% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 15% | 15% | 71% | 60% |
| New Carbon Bed | 0% | 0% | 2% | 2% | 6% | 6% |
| New Quencher | 17% | 17% | 12% | 12% | 10% | 10% |
| New Afterburner | 6% | 2% | 6% | 2% | 6% | 2% |
| New Reheater | 0% | 0% | 8% | 8% | 60% | 48% |
| Fabric Filter DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| Fabric Filter DOM, mod | 2% | 0% | 2% | 0% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| HEWS DOM, mod | 10% | 10% | 8% | 8% | 2% | 2% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 4% | 2% | 4% | 2% | 4% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 46% | 40% | 42% | 37% | 42% | 52% |
| None | 6% | 8% | 4% | 6% | 2% | 2% |
| **Government On-site Incinerators** | | | | | | |
| New Fabric Filters | 29% | 24% | 29% | 24% | 38% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 48% | 43% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 5% |
| New Afterburner | 5% | 5% | 5% | 5% | 5% | 5% |
| New Reheater | 0% | 0% | 0% | 0% | 19% | 19% |
| Fabric Filter DOM, small | 0% | 5% | 0% | 5% | 0% | 5% |
| Fabric Filter DOM, mod | 14% | 10% | 14% | 10% | 14% | 10% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 5% | 5% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 14% | 14% | 14% | 14% | 14% | 14% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 52% | 57% | 52% | 57% | 52% |
| None | 19% | 19% | 19% | 19% | 14% | 14% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | Short Term | | Long Term | |
| | | | | | | | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 0% | 31% | 4% | 40% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 2% | 29% | 4% | 40% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 2% | 33% | 8% | 46% |
| BTF-ACI (70%) | 0% | 6% | 0% | 25% | 10% | 10% | 2% | 31% | 8% | 46% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **100%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $24 | $3 | $7 | $27 | $7 | $69 | -17% |
| Floor (70%) | $16 | $3 | $6 | $23 | $7 | $55 | -20% |
| Rec (50%) | $26 | $4 | $7 | $29 | $7 | $72 | -19% |
| Rec (70%) | $19 | $4 | $6 | $25 | $7 | $60 | -21% |
| BTF-ACI (50%) | $34 | $5 | $10 | $49 | $27 | $125 | -13% |
| BTF-ACI (70%) | $27 | $5 | $9 | $44 | $26 | $111 | -15% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **100%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | $0.19 |
| BTF-ACI (70%) | $2.27 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS AFTER COMBUSTION SYSTEM CONSOLIDATIONS
(millions)
(Includes Cost of Waste Diversion)

**Price pass through assumed:** **100%**

| Option | Total |
|---|---|
| Floor (50%) | $69 |
| Floor (70%) | $55 |
| Rec (50%) | $73 |
| Rec (70%) | $61 |
| BTF-ACI (50%) | $125 |
| BTF-ACI (70%) | $113 |

**Notes:**

1. Compliance costs after consolidation include the costs for those systems that will continue to burn waste, as well as the shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning wastes on-site. Other types of combustion systems that stop burning wastes do not incur compliance costs and therefore are excluded.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specfic firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION

**Price pass through assumed:** **100%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $728,353 | $312,665 | $298,694 | $303,967 | $281,064 |
| Floor (70%) | $495,465 | $265,102 | $268,924 | $265,247 | $261,146 |
| Rec (50%) | $773,990 | $394,025 | $303,414 | $319,358 | $281,064 |
| Rec (70%) | $578,418 | $360,261 | $277,499 | $282,653 | $261,146 |
| BTF-ACI (50%) | $1,043,019 | $508,367 | $426,560 | $557,891 | $1,061,809 |
| BTF-ACI (70%) | $818,226 | $464,470 | $403,222 | $514,958 | $1,042,619 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON**
**(Short Term - After Consolidation)**

**Price pass through assumed:** **100%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $31 | $37 | $17 | $36 |
| Floor (70%) | $23 | $31 | $14 | $32 |
| Rec (50%) | $33 | $49 | $17 | $37 |
| Rec (70%) | $26 | $45 | $15 | $33 |
| BTF-ACI (50%) | $44 | $66 | $21 | $55 |
| BTF-ACI (70%) | $35 | $59 | $19 | $45 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 63% | 0% | 37% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 62% | 0% | 38% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 100% | 0% | 0% | 88% | 0% | 13% | 90% | 0% | 10% | 52% | 0% | 48% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

## PRELIMINARY ECONOMIC IMPACT RESULTS

### NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM
### (net of facilities currently burning below their break-even quantity)

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 16 |
| BTF-ACI (70%) | 0 | 0 | 0 | 20 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 42 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 1 | 0 | 0 | 13 |
| Floor (70%) | 0 | 0 | 0 | 13 |
| Rec (50%) | 1 | 0 | 0 | 13 |
| Rec (70%) | 0 | 0 | 0 | 13 |
| BTF-ACI (50%) | 0 | 0 | 0 | 10 |
| BTF-ACI (70%) | 0 | 0 | 0 | 13 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 15% |
| BTF-ACI (70%) | 0% | 0% | 0% | 18% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 12% |
| Floor (70%) | 0% | 0% | 0% | 12% |
| Rec (50%) | 6% | 0% | 0% | 12% |
| Rec (70%) | 0% | 0% | 0% | 12% |
| BTF-ACI (50%) | 0% | 0% | 0% | 9% |
| BTF-ACI (70%) | 0% | 0% | 0% | 12% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 51,040 | 54,210 | 2% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Floor (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| Rec (50%) | 11,530 | 0 | 3,170 | 111,330 | 126,030 | 4% |
| Rec (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 106,270 | 109,440 | 3% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED SHORT-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 182 | 182 | 262 | 262 |
| Floor (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| Rec (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| BTF-ACI (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 231 | 131 | 231 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 239 | 139 | 239 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 31 | 5 | 129 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 60 | 29 | 133 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 85 | 8 | 157 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **16** | **34** | **180** | **43** | 426 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 96 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 57 | 29 | 131 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 8 | 76 | 7 | 130 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **113** | **15** | **30** | **164** | **42** | 364 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 38 | 5 | 139 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 57 | 29 | 131 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 100 | 8 | 177 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **153** | **19** | **40** | **199** | **43** | 454 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 55 | 29 | 128 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 90 | 7 | 150 |
| Permitting | 1 | 0 | 1 | 3 | 1 | 7 |
| **Total** | **113** | **17** | **37** | **182** | **42** | 391 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 10 | 22 | 92 | 13 | 236 |
| CEMs/Monitoring Equipment | 25 | 6 | 15 | 64 | 29 | 139 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 17 | 35 | 205 | 24 | 366 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **209** | **33** | **73** | **366** | **67** | 748 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(70%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 78 | 9 | 20 | 77 | 13 | 197 |
| CEMs/Monitoring Equipment | 25 | 6 | 14 | 62 | 29 | 137 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 67 | 14 | 35 | 176 | 22 | 314 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **171** | **29** | **71** | **319** | **65** | 655 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **100%**

(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $22 | $22 | $20 | $20 |
| Floor (70%) | $15 | $15 | $15 | $15 |
| Rec (50%) | $22 | $22 | $20 | $20 |
| Rec (70%) | $16 | $16 | $16 | $16 |
| BTF-ACI (50%) | $47 | $47 | $37 | $40 |
| BTF-ACI (70%) | $35 | $35 | $29 | $31 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 15% | 9% | 39% | 24% | 12% | 0% | 25% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 33% | 21% | 37% | 6% | 4% | 24% | 14% | 43% | 10% | 10% |
| Floor (70%) | 30% | 9% | 36% | 21% | 3% | 13% | 13% | 50% | 25% | 0% | 85% | 5% | 10% | 0% | 0% | 38% | 25% | 27% | 6% | 4% | 33% | 14% | 33% | 5% | 14% |
| Rec (50%) | 3% | 21% | 36% | 21% | 18% | 0% | 0% | 75% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 27% | 19% | 48% | 0% | 6% | 24% | 14% | 43% | 10% | 10% |
| Rec (70%) | 27% | 12% | 30% | 24% | 6% | 0% | 0% | 75% | 25% | 0% | 85% | 10% | 5% | 0% | 0% | 33% | 23% | 38% | 2% | 4% | 33% | 14% | 33% | 5% | 14% |
| BTF-ACI (50%) | 3% | 6% | 30% | 30% | 30% | 0% | 0% | 38% | 38% | 25% | 60% | 30% | 10% | 0% | 0% | 13% | 25% | 46% | 8% | 8% | 19% | 10% | 33% | 24% | 14% |
| BTF-ACI (70%) | 21% | 6% | 15% | 36% | 21% | 0% | 0% | 38% | 50% | 13% | 70% | 25% | 5% | 0% | 0% | 15% | 31% | 38% | 10% | 6% | 24% | 14% | 24% | 19% | 19% |

**Notes:**

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES**
**(percentage of permitted combustion systems; see Note 3)**

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 39% | 30% | 30% | 0% | 0% | 13% | 50% | 38% | 0% | 0% | 90% | 0% | 0% | 0% | 10% | 48% | 13% | 10% | 15% | 13% |
| Floor (70%) | 61% | 18% | 21% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 10% | 19% | 10% |
| Rec (50%) | 39% | 30% | 30% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 48% | 13% | 12% | 12% | 15% |
| Rec (70%) | 52% | 27% | 21% | 0% | 0% | 0% | 25% | 75% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 10% | 12% | 15% | 12% |
| BTF-ACI (50%) | 24% | 27% | 45% | 3% | 0% | 0% | 13% | 63% | 25% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 10% | 19% | 23% | 12% |
| BTF-ACI (70%) | 36% | 24% | 36% | 3% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 37% | 21% | 12% | 19% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **100%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule |
| | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | |
| Floor (50%) | $0 | -11% | 72% | ($15) | -28% | 46% | $5 | -2% | 57% | ($15) | -8% | 59% |
| Floor (70%) | $0 | -8% | 74% | ($16) | -26% | 48% | $1 | -2% | 57% | ($17) | -7% | 61% |
| Rec (50%) | $0 | -11% | 72% | ($27) | -40% | 39% | $4 | -2% | 57% | ($15) | -8% | 59% |
| Rec (70%) | $0 | -9% | 74% | ($28) | -40% | 39% | $2 | -2% | 57% | ($17) | -7% | 60% |
| BTF-ACI (50%) | $0 | -22% | 63% | ($19) | -41% | 38% | $26 | 0% | 58% | ($7) | -9% | 59% |
| BTF-ACI (70%) | $0 | -17% | 67% | ($25) | -43% | 37% | $16 | -1% | 58% | ($11) | -8% | 60% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.

## LIST OF EXHIBITS

### (100% Price Pass-Through; PM CEM Option 2: Not Required for Any Facilities)

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL COMPLIANCE COSTS (millions)**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites | Total |
|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $7 | $33 | $4 | $69 |
| Floor (70%) | $15 | $2 | $6 | $28 | $4 | $55 |
| Rec (50%) | $24 | $3 | $7 | $37 | $4 | $75 |
| Rec (70%) | $17 | $3 | $6 | $32 | $4 | $63 |
| BTF-ACI (50%) | $33 | $5 | $10 | $59 | $24 | $130 |
| BTF-ACI (70%) | $25 | $4 | $9 | $54 | $24 | $116 |

**Notes:**

1. Estimates assume that all facilities comply. Facilities non-viable in the baseline are included.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $677,373 | $260,252 | $267,273 | $237,552 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $238,749 | $203,763 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $267,634 | $265,811 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $242,210 | $234,073 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $379,459 | $429,193 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $356,234 | $392,281 | $941,121 |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER COMBUSTION SYSTEM**
**(Assuming no Market Exit)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Estimated Number of Combustion Systems | 33 | 10 | 26 | 138 | 25 |
| Floor (50%) | $677,373 | $260,252 | $267,273 | $237,552 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $238,749 | $203,763 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $267,634 | $265,811 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $242,210 | $234,073 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $379,459 | $429,193 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $356,234 | $392,281 | $941,121 |

**Notes:**

## AVERAGE TOTAL ANNUAL COMPLIANCE COSTS PER TON
## (Before Consolidation)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**AVERAGE TOTAL ANNUAL BASELINE COST OF BURNING WASTE AND COMPLIANCE COSTS PER TON OF HAZARDOUS WASTE BURNED (Before Consolidation)**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Baseline** | $74 | $114 | $658 | $36,325 |
| **Compliance Costs** | | | | |
| Floor (50%) | $29 | $30 | $116 | $17,853 |
| Floor (70%) | $21 | $24 | $111 | $17,190 |
| Rec (50%) | $31 | $42 | $129 | $17,968 |
| Rec (70%) | $23 | $38 | $121 | $17,318 |
| BTF-ACI (50%) | $41 | $60 | $135 | $15,929 |
| BTF-ACI (70%) | $33 | $53 | $127 | $15,828 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. On-site incinerator baseline and compliance costs per ton are high due to the large number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger quantities of hazardous waste compliance costs per ton would actually be lower. If facilities are burning large volumes of non hazardous waste in addition to the hazardous waste, baseline costs per ton would be lower.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**BASELINE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED**
**(Number of Combustion systems Falling in Range)**

| | <$0 | $0 - $50 | $51 - $100 | $101 - $150 | >$150 |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 8 | 15 | 10 |
| LWA Kilns | 0 | 0 | 8 | 3 | 0 |
| Commercial Incinerators | 3 | 1 | 1 | 1 | 20 |
| On-site Incinerators | 48 | 13 | 11 | 11 | 56 |

**BASELINE OPERATING PROFITS AS A PERCENTAGE OF BASELINE WEIGHTED AVERAGE PRICES PER TON**
**(Number of Combustion systems Falling in Range)**

| | <0% | 0% - 10% | 11% - 25% | 26% - 50% | >50% |
|---|---|---|---|---|---|
| Cement Kilns | 0 | 0 | 0 | 2 | 31 |
| LWA Kilns | 0 | 0 | 0 | 0 | 10 |
| Commercial Incinerators | 3 | 0 | 3 | 8 | 13 |
| On-site Incinerators | 48 | 8 | 24 | 19 | 40 |

**Notes:**

1. Baseline Operating Profits = (weighted average price per ton + weighted average energy savings per ton) - total annual baseline costs per ton. Total annual baseline costs include fixed annual capital costs, fixed annual operating and maintenance costs, and annual variable costs.
2. Baseline operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Number of systems with average operating profits less than $0 (or <0%) includes those burning very little or no waste.
4. Baseline operating profits are calculated at the system level. Consolidating burning into fewer systems may reduce facility closures, explaining why the system estimates presented in this exhibit appear higher than the facility closure presented in later exhibits.
5. Includes combustion systems not currently burning waste in the cement kiln, LWAK, and commercial incinerator sectors; or burning less than 50 tons per year in the on-site incinerator sector.

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 33% | 27% | 33% | 27% | 61% | 52% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 45% | 36% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 45% | 33% | 45% | 33% | 39% | 30% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 3% | 3% | 3% | 3% | 0% | 0% |
| Fabric Filter DOM, mod | 9% | 6% | 9% | 6% | 6% | 6% |
| DESP DOM, small | 6% | 0% | 6% | 0% | 3% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 3% | 3% | 3% | 3% | 3% | 3% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 55% | 42% | 64% | 52% | 73% | 55% |
| None | 12% | 27% | 3% | 21% | 3% | 18% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 63% | 50% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 63% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 88% | 88% | 88% | 88% | 50% | 50% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 25% | 13% | 25% | 13% | 13% | 0% |
| Fabric Filter DOM, mod | 13% | 0% | 13% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 75% | 75% | 75% | 75% |
| Feed Control | 100% | 75% | 63% | 63% | 50% | 63% |
| None | 0% | 13% | 0% | 0% | 0% | 0% |

**PERCENT OF SYSTEMS REQUIRING CONTROL MEASURES cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50%) | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 15% | 10% | 15% | 15% | 40% | 40% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 20% | 20% | 85% | 85% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 55% | 50% | 45% | 40% | 20% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 5% | 5% | 35% | 35% |
| Fabric Filter DOM, small | 5% | 5% | 5% | 5% | 5% | 5% |
| Fabric Filter DOM, mod | 10% | 5% | 10% | 5% | 10% | 5% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 5% | 0% | 5% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 0% | 0% |
| HEWS DOM, small | 0% | 5% | 0% | 5% | 0% | 0% |
| HEWS DOM, mod | 15% | 10% | 15% | 10% | 5% | 5% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 5% | 0% | 5% | 0% | 5% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 85% | 80% | 80% | 75% | 70% | 65% |
| None | 5% | 5% | 5% | 5% | 5% | 5% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 67% | 65% | 71% | 69% | 85% | 81% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 15% | 15% | 71% | 60% |
| New Carbon Bed | 0% | 0% | 2% | 2% | 6% | 6% |
| New Quencher | 17% | 17% | 12% | 12% | 10% | 10% |
| New Afterburner | 6% | 2% | 6% | 2% | 6% | 2% |
| New Reheater | 0% | 0% | 8% | 8% | 60% | 48% |
| Fabric Filter DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| Fabric Filter DOM, mod | 2% | 0% | 2% | 0% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 2% | 2% | 2% | 2% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 2% |
| HEWS DOM, mod | 10% | 10% | 8% | 8% | 2% | 2% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 4% | 2% | 4% | 2% | 4% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 46% | 40% | 42% | 37% | 42% | 52% |
| None | 6% | 8% | 4% | 6% | 2% | 2% |
| **Government On-site Incinerators** | | | | | | |
| New Fabric Filters | 29% | 24% | 29% | 24% | 38% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 48% | 43% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 5% |
| New Afterburner | 5% | 5% | 5% | 5% | 5% | 5% |
| New Reheater | 0% | 0% | 0% | 0% | 19% | 19% |
| Fabric Filter DOM, small | 0% | 5% | 0% | 5% | 0% | 5% |
| Fabric Filter DOM, mod | 14% | 10% | 14% | 10% | 14% | 10% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 5% | 5% | 5% | 5% | 5% | 5% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 14% | 14% | 14% | 14% | 14% | 14% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 52% | 57% | 52% | 57% | 52% |
| None | 19% | 19% | 19% | 19% | 14% | 14% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Cement Kilns** | | | | | | |
| New Fabric Filters | 35% | 35% | 33% | 30% | 39% | 39% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 24% | 24% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 24% | 32% | 23% | 27% | 13% | 15% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 2% | 3% | 2% | 1% | 1% |
| DESP DOM, small | 4% | 0% | 4% | 0% | 1% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 33% | 30% | 37% | 40% | 22% | 21% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **LWAKs** | | | | | | |
| New Fabric Filters | 0% | 0% | 0% | 0% | 27% | 24% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 31% | 27% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 38% | 47% | 28% | 29% | 10% | 11% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, small | 1% | 1% | 1% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 0% | 2% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 38% | 42% | 27% | 30% |
| Feed Control | 58% | 52% | 31% | 29% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

**PERCENT OF NEW COMPLIANCE COSTS BY CONTROL MEASURE, cont.**
**(Before Consolidation)**

| | Floor(50%) | Floor(70%) | Rec(50%) | Rec(70%) | BTF-ACI(50% | BTF-ACI(70% |
|---|---|---|---|---|---|---|
| **Commercial Incinerators** | | | | | | |
| New Fabric Filters | 10% | 8% | 9% | 11% | 19% | 20% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 16% | 18% | 47% | 50% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 21% | 23% | 17% | 17% | 4% | 3% |
| New Afterburner | 0% | 0% | 0% | 0% | 0% | 0% |
| New Reheater | 0% | 0% | 3% | 3% | 19% | 20% |
| Fabric Filter DOM, small | 0% | 1% | 0% | 1% | 0% | 0% |
| Fabric Filter DOM, mod | 3% | 1% | 3% | 1% | 2% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 1% | 0% | 1% | 0% | 0% | 0% |
| IWS DOM, mod | 1% | 1% | 1% | 1% | 0% | 0% |
| HEWS DOM, small | 0% | 2% | 0% | 2% | 0% | 0% |
| HEWS DOM, mod | 7% | 3% | 6% | 3% | 1% | 1% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 0% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 57% | 61% | 44% | 44% | 8% | 5% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **On-Site Incinerators** | | | | | | |
| New Fabric Filters | 39% | 54% | 36% | 48% | 28% | 33% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 9% | 12% | 28% | 30% |
| New Carbon Bed | 0% | 0% | 0% | 1% | 1% | 1% |
| New Quencher | 5% | 7% | 3% | 4% | 2% | 2% |
| New Afterburner | 30% | 7% | 27% | 6% | 17% | 3% |
| New Reheater | 0% | 0% | 4% | 5% | 20% | 21% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 2% | 4% | 1% | 3% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 0% | 1% | 0% | 0% | 0% | 0% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 23% | 26% | 18% | 20% | 4% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |
| **Government On-Site Incinerators** | | | | | | |
| New Fabric Filters | 22% | 21% | 22% | 21% | 22% | 21% |
| New LEWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New IWS | 0% | 0% | 0% | 0% | 0% | 0% |
| New Carbon Injection | 0% | 0% | 0% | 0% | 32% | 31% |
| New Carbon Bed | 0% | 0% | 0% | 0% | 0% | 0% |
| New Quencher | 0% | 0% | 0% | 0% | 0% | 2% |
| New Afterburner | 6% | 7% | 6% | 7% | 4% | 4% |
| New Reheater | 0% | 0% | 0% | 0% | 12% | 13% |
| Fabric Filter DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| Fabric Filter DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| DESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| WESP DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| IWS DOM, mod | 8% | 9% | 8% | 9% | 5% | 6% |
| HEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| HEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, small | 0% | 0% | 0% | 0% | 0% | 0% |
| LEWS DOM, mod | 0% | 0% | 0% | 0% | 0% | 0% |
| Combination DOM | 2% | 2% | 2% | 2% | 1% | 1% |
| New DS | 0% | 0% | 0% | 0% | 0% | 0% |
| Feed Control | 62% | 61% | 62% | 61% | 24% | 22% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% |

## PERCENTAGE OF COMBUSTION SYSTEMS BURNING BELOW STATIC BEQs

| | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Short Term | Long Term | Short Term | Long Term | Short Term | Long Term | Short Term | | Long Term | |
| | | | | | | | <20% below | >20% below | <20% below | >20% below |
| Floor (50%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Floor (70%) | 0% | 3% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| Rec (50%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 4% | 38% |
| Rec (70%) | 0% | 6% | 0% | 0% | 10% | 10% | 10% | 21% | 2% | 38% |
| BTF-ACI (50%) | 0% | 6% | 13% | 25% | 10% | 10% | 10% | 23% | 12% | 42% |
| BTF-ACI (70%) | 0% | 6% | 0% | 13% | 10% | 10% | 12% | 21% | 12% | 42% |

**Notes:**

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS (millions)**
**AFTER COMBUSTION SYSTEM CONSOLIDATIONS**

**Price pass through assumed:** **100%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-Sites | Total | % Difference from Compliance Costs with No System Consolidation |
|---|---|---|---|---|---|---|---|
| Floor (50%) | $22 | $3 | $6 | $22 | $4 | $58 | -17% |
| Floor (70%) | $15 | $2 | $5 | $19 | $4 | $45 | -19% |
| Rec (50%) | $24 | $3 | $6 | $24 | $4 | $61 | -19% |
| Rec (70%) | $17 | $3 | $5 | $20 | $4 | $50 | -21% |
| BTF-ACI (50%) | $33 | $5 | $9 | $44 | $24 | $114 | -12% |
| BTF-ACI (70%) | $25 | $4 | $8 | $41 | $24 | $102 | -12% |

**Notes:**

1. Compliance costs after consolidation include only the costs for those systems that will continue to burn waste, and do not include shipping and disposal costs (after the assumed price increase) for on-site incinerators that decide to stop burning waste on-site.
2. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.
3. "Consolidation" allows for non-viable combustion systems to consolidate waste flows with other systems at the same facility, or to exit the waste burning market. As a result, the number of combustion systems incurring compliance costs is reduced.

TOTAL COST OF WASTE DIVERTED FROM ON-SITE SYSTEMS THAT STOP BURNING (millions)

**Price pass through assumed:** **100%**

| Option | On-site Incinerators |
|---|---|
| Floor (50%) | $0.19 |
| Floor (70%) | $0.19 |
| Rec (50%) | $0.19 |
| Rec (70%) | $0.19 |
| BTF-ACI (50%) | $0.19 |
| BTF-ACI (70%) | -$0.73 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. We assume that government facilities continue burning post-MACT and therefore no waste will be diverted from these facilities.
2. Waste diversion costs include both transportation and disposal costs (after the assumed price increase).

## PRELIMINARY ECONOMIC IMPACT RESULTS

## AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER COMBUSTION SYSTEM AFTER CONSOLIDATION

**Price pass through assumed:** **100%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators | Government On-sites |
|---|---|---|---|---|---|
| Floor (50%) | $677,373 | $260,252 | $243,257 | $248,774 | $179,565 |
| Floor (70%) | $444,485 | $212,689 | $213,488 | $208,262 | $159,648 |
| Rec (50%) | $723,010 | $341,613 | $247,977 | $264,165 | $179,565 |
| Rec (70%) | $527,438 | $307,849 | $222,062 | $225,156 | $159,648 |
| BTF-ACI (50%) | $992,039 | $455,955 | $371,123 | $491,946 | $960,310 |
| BTF-ACI (70%) | $767,246 | $412,058 | $347,785 | $451,316 | $941,121 |

**Notes:**

1. Average annual pre-tax compliance costs per system are based on the number of combustion systems that remain open after consolidation. The number of combustion systems that remain open in the sectors may vary by option.
2. Total annual pre-tax compliance costs for the on-site incinerator sector do not include the cost of diverting waste to alternative management for those systems that stop burning hazardous waste.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### AVERAGE TOTAL ANNUAL PRE-TAX COMPLIANCE COSTS PER TON
### (Short Term - After Consolidation)

**Price pass through assumed:** **100%**

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Floor (50%) | $29 | $30 | $14 | $28 |
| Floor (70%) | $21 | $24 | $11 | $25 |
| Rec (50%) | $31 | $42 | $14 | $29 |
| Rec (70%) | $23 | $38 | $12 | $26 |
| BTF-ACI (50%) | $41 | $60 | $18 | $50 |
| BTF-ACI (70%) | $33 | $53 | $16 | $44 |

**Notes:**

1. Average compliance costs per ton exclude systems currently not burning hazardous waste.
2. Average on-site incinerator compliance costs include direct costs of meeting the new emission levels. Indirect costs to facilities that stop burning wastes and must ship them off-site for management are not included.
3. Only private systems, and not governmental systems, are reflected in the average compliance costs per ton for on-site incinerators.
4. On-site incinerator compliance costs per ton are high due to a number of on-site incinerators that reported low tons burned data to BRS in 1995. If facilities are burning larger volumes of hazardous waste, compliance costs per ton for on-site incinerators will be lower.
5. Because compliance costs are tax-deductible, the portion of pre-tax costs borne by the firm would be between 70 and 80 percent of the values shown above, depending on the specific firm's marginal tax bracket.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING SHORT TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** 100%

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| Rec (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| BTF-ACI (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 65% | 0% | 35% |

**Notes:**

1. Percent of systems currently not meeting short term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 15% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**PERCENTAGE OF COMBUSTION SYSTEMS MEETING LONG TERM BEQ AFTER CONSOLIDATION**
**(Percentage of combustion systems; includes systems currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | | | LWAKs | | | Commercial Incinerators | | | Private On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below | Above | <20% below | >20% below |
| Floor (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 52% | 0% | 48% |
| Floor (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| Rec (50%) | 97% | 0% | 3% | 100% | 0% | 0% | 90% | 0% | 10% | 52% | 0% | 48% |
| Rec (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 50% | 0% | 50% |
| BTF-ACI (50%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 52% | 0% | 48% |
| BTF-ACI (70%) | 100% | 0% | 0% | 100% | 0% | 0% | 90% | 0% | 10% | 52% | 0% | 48% |

**Notes:**

1. Percent of systems currently not meeting long term baseline break-even quantity:

| | |
|---|---|
| Cement Kilns | 0% |
| LWAKs | 0% |
| Commercial Incinerators | 10% |
| Private On-site Incinerators | 35% |

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 26 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 0 | 0 | 0 | 16 |
| Floor (70%) | 0 | 0 | 0 | 16 |
| Rec (50%) | 0 | 0 | 0 | 16 |
| Rec (70%) | 0 | 0 | 0 | 16 |
| BTF-ACI (50%) | 0 | 0 | 0 | 16 |
| BTF-ACI (70%) | 0 | 0 | 0 | 16 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**NUMBER OF COMBUSTION FACILITIES LIKELY TO STOP BURNING HAZARDOUS WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0 | 0 | 3 | 42 |
| Incremental Facilities Likely to Stop Burning Waste | | | | |
| Floor (50%) | 1 | 0 | 0 | 10 |
| Floor (70%) | 0 | 0 | 0 | 13 |
| Rec (50%) | 1 | 0 | 0 | 10 |
| Rec (70%) | 0 | 0 | 0 | 13 |
| BTF-ACI (50%) | 0 | 0 | 0 | 10 |
| BTF-ACI (70%) | 0 | 0 | 0 | 10 |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE SHORT TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 24% |
| Floor (50%) | 0% | 0% | 0% | 15% |
| Floor (70%) | 0% | 0% | 0% | 15% |
| Rec (50%) | 0% | 0% | 0% | 15% |
| Rec (70%) | 0% | 0% | 0% | 15% |
| BTF-ACI (50%) | 0% | 0% | 0% | 15% |
| BTF-ACI (70%) | 0% | 0% | 0% | 15% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of the Hazardous Waste Combustion MACT.

**PERCENTAGE OF FACILITIES LIKELY TO STOP BURNING WASTE IN THE LONG TERM**
**(net of facilities currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| Facilities currently burning below break-even quantity in baseline | 0% | 0% | 13% | 38% |
| Floor (50%) | 6% | 0% | 0% | 9% |
| Floor (70%) | 0% | 0% | 0% | 12% |
| Rec (50%) | 6% | 0% | 0% | 9% |
| Rec (70%) | 0% | 0% | 0% | 12% |
| BTF-ACI (50%) | 0% | 0% | 0% | 9% |
| BTF-ACI (70%) | 0% | 0% | 0% | 9% |

**Notes:**

1. On-site incinerator estimates are for private facilities only. Government facilities are analyzed separately and are not expected to close as a result of th Hazardous Waste Combustion MACT.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE SHORT TERM**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 45,770 | 48,940 | 1% |
| Floor (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Floor (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| Rec (70%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 46,210 | 49,380 | 1% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 44,070 | 47,240 | 1% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**QUANTITY OF HAZARDOUS WASTE THAT COULD BE DIVERTED FROM COMBUSTION FACILITIES IN THE LONG TERM**

**Price pass through assumed:** **100%**

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | TOTAL | Percentage of all BRS Combusted Hazardous Waste |
|---|---|---|---|---|---|---|
| Baseline | 0 | 0 | 3,170 | 97,760 | 100,930 | 3% |
| Floor (50%) | 11,530 | 0 | 3,170 | 106,270 | 120,970 | 4% |
| Floor (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| Rec (50%) | 11,530 | 0 | 3,170 | 106,270 | 120,970 | 4% |
| Rec (70%) | 0 | 0 | 3,170 | 111,330 | 114,500 | 3% |
| BTF-ACI (50%) | 0 | 0 | 3,170 | 106,270 | 109,440 | 3% |
| BTF-ACI (70%) | 0 | 0 | 3,170 | 106,270 | 109,440 | 3% |

**Notes:**

1. Combusted hazardous waste reported to BRS in 1995 excluding tonnage burned in on-site boilers: 3,300,000
2. Estimates do not include waste diverted from systems that consolidate waste into other systems at the same facility.
3. Quantities of waste diverted under each option are upper-bound, total estimates. They are not incremental and may include waste from facilities non-viable in the baseline.
4. Baseline quantities of waste diverted resulting from consolidation and market exit likely to occur in the baseline (i.e., without the MACT standards) are shown in the first row of the exhibit.
5. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED SHORT-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** 100%

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 182 | 182 | 262 | 262 |
| Floor (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| Rec (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |
| BTF-ACI (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 215 | 131 | 215 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 226 | 131 | 226 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED LONG-TERM EMPLOYMENT LOSSES AT COMBUSTION SYSTEMS**
**(net of systems currently burning below their break-even quantity)**

**Price pass through assumed:** **100%**

| MACT Option | Cement Kilns | | LWAKs | | Commercial Incinerators | | On-site Incinerators | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low End | High End | Low End | High End | Low End | High End | Low End | High End | Low End | High End |
| Baseline | 0 | 0 | 0 | 0 | 80 | 80 | 345 | 408 | 425 | 488 |
| Floor (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 90 | 108 | 111 | 129 |
| Floor (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 116 | 98 | 116 |
| Rec (50%) | 21 | 21 | 0 | 0 | 0 | 0 | 90 | 108 | 111 | 129 |
| Rec (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 116 | 98 | 116 |
| BTF-ACI (50%) | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 108 | 90 | 108 |
| BTF-ACI (70%) | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 108 | 90 | 108 |

**Notes:**

1. Low-end estimates include employment losses associated only with those systems located at facilities where all systems stop burning. High-end estimates reflect all employment losses, including those associated with closing systems located at facilities where at least one system remains open. The low-end estimate assumes the possibility for employee reassignment within a facility that has combustion systems remaining open.
2. Estimates are sensitive to a number of assumptions, including the estimated number of employees associated with waste burning for each system.
3. Estimates are based on primary employment impacts only, and ignore secondary spill-over effects.
4. Employment impacts are national estimates.
5. Employment loss estimates are incremental, or directly attributable to compliance with the proposed MACT standards. These estimates do not include losses that are associated with systems that are non-viable in the baseline and therefore not directly attributable to compliance with the proposed MACT standards. Those baseline losses are provided separately in the first row of the above exhibit.
6. Compliance costs include CEM costs.
7. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(50%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 5 | 10 | 32 | 5 | 129 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 4 | 9 | 86 | 8 | 157 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **10** | **20** | **123** | **15** | 302 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **FIr(70%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 5 | 8 | 28 | 5 | 97 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 4 | 7 | 78 | 7 | 132 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **94** | **9** | **16** | **112** | **14** | 245 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(50%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 77 | 7 | 12 | 38 | 5 | 139 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 50 | 5 | 13 | 100 | 8 | 176 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **134** | **13** | **26** | **143** | **15** | 331 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **Rec(70%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 51 | 6 | 10 | 34 | 5 | 106 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 8 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 35 | 5 | 12 | 91 | 7 | 151 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 7 |
| **Total** | **94** | **11** | **23** | **131** | **14** | 273 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| | Cement Kilns | LWAKs | Commercial Incinerators | On-site Incinerators | Government On-site Incinerators | Total |
|---|---|---|---|---|---|---|
| **Labor Within Pollution Control Industry** | | | | | | |
| Pollution Control Equipment | 99 | 10 | 22 | 94 | 13 | 238 |
| CEMs/Monitoring Equipment | 6 | 0 | 0 | 2 | 1 | 9 |
| **Labor Within Combustion Sector** | | | | | | |
| O&M | 84 | 17 | 35 | 211 | 24 | 371 |
| Permitting | 1 | 0 | 1 | 4 | 1 | 8 |
| **Total** | **190** | **27** | **59** | **311** | **39** | 626 |

**Notes:**

1. Estimates are sensitive to a number of assumptions, including the wage rates associated with compliance requirements and the percent of revenues generated due to each of the compliance requirements.
2. Estimates are based on primary employment impacts only and ignore any secondary spill-over effects. Therefore, they do not account for job displacement across sectors as investment funds are diverted from other areas of the larger economy and should not be interpreted as net gains.
3. Employment impacts are national estimates.
4. Compliance costs include CEM costs.
5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**ESTIMATED EMPLOYMENT INCREASES ASSOCIATED WITH COMPLIANCE REQUIREMENTS AFTER SYSTEM CONSOLIDATION**

**MACT Option:** **BTF(50%)**
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5. Employment gains associated with systems currently not burning waste or that are currently non-viable in the baseline are not included in these estimates. Some additional systems may be non-viable in the baseline, leading us to overestimate employment gains due to compliance with the proposed MACT standards.
6. Totals may not add due to rounding.

## PRELIMINARY ECONOMIC IMPACT RESULTS

### WEIGHTED AVERAGE COMBUSTION PRICE PER TON AND INCREASE IN PRICES DUE TO ASSUMED PRICE PASS THROUGH

**Price pass through assumed:** **100%**
(percentage of median compliance costs for the most efficient sector)

| Options | Cement Kilns | LWA Kilns | Commercial Incinerators | On-site Incinerators |
|---|---|---|---|---|
| **Current weighted average price** | $172 | $136 | $689 | $729 |
| **Increase in price due to compliance costs passed through** | | | | |
| Floor (50%) | $21 | $21 | $17 | $18 |
| Floor (70%) | $13 | $13 | $12 | $12 |
| Rec (50%) | $21 | $21 | $17 | $18 |
| Rec (70%) | $14 | $14 | $13 | $14 |
| BTF-ACI (50%) | $45 | $45 | $33 | $37 |
| BTF-ACI (70%) | $34 | $34 | $27 | $29 |

**Notes:**

1. Compliance costs include CEM costs.
2. Median compliance costs per ton exclude systems currently not burning hazardous waste.
3. **The commercial sector with the lowest total cost per ton (baseline + compliance cost) drives the assumed increase in combustion prices of waste categories managed by that sector.**
4. Prices for on-site incinerators reflect the cost per ton of off-site treatment that generators avoid by burning the waste on-site.
5. **Weighted average price per ton = (solids percentage of total waste burned in each sector x solids price) + (liquids percentage of total waste burned in each sector x liquids price) + (sludges percentage of total waste burned in each sector x sludges price).**

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF BASELINE COSTS OF HAZARDOUS WASTE BURNING
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | | Government On-sites | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 18% | 9% | 42% | 21% | 9% | 13% | 13% | 50% | 25% | 0% | 80% | 10% | 10% | 0% | 0% | 46% | 13% | 35% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Floor (70%) | 33% | 18% | 30% | 15% | 3% | 13% | 38% | 38% | 13% | 0% | 85% | 5% | 10% | 0% | 0% | 46% | 19% | 29% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| Rec (50%) | 15% | 12% | 39% | 21% | 12% | 0% | 0% | 75% | 25% | 0% | 80% | 15% | 5% | 0% | 0% | 40% | 13% | 40% | 4% | 2% | 33% | 33% | 19% | 5% | 10% |
| Rec (70%) | 30% | 18% | 27% | 18% | 6% | 0% | 0% | 88% | 13% | 0% | 85% | 10% | 5% | 0% | 0% | 40% | 17% | 37% | 4% | 2% | 48% | 19% | 19% | 5% | 10% |
| BTF-ACI (50%) | 6% | 3% | 33% | 33% | 24% | 0% | 0% | 63% | 13% | 25% | 70% | 25% | 5% | 0% | 0% | 21% | 21% | 46% | 6% | 6% | 24% | 14% | 38% | 10% | 14% |
| BTF-ACI (70%) | 24% | 9% | 18% | 33% | 15% | 0% | 0% | 63% | 25% | 13% | 70% | 25% | 5% | 0% | 0% | 23% | 25% | 40% | 6% | 6% | 33% | 10% | 33% | 10% | 14% |

Notes:

1. Compliance costs as a percent of baseline costs = [Total annual compliance costs/Total annual baseline costs]
2. Total annual baseline costs = Annualized fixed capital and fixed operating costs + (Variable operating costs * Hazardous waste burned).
3. Percentages include systems not currently burning hazardous waste.

PRELIMINARY ECONOMIC IMPACT RESULTS

NEW COMPLIANCE COSTS AS A PERCENTAGE OF HAZARDOUS WASTE BURNING REVENUES
(percentage of permitted combustion systems; see Note 3)

| | Cement Kilns | | | | | LWAKs | | | | | Commercial Incinerators | | | | | On-site Incinerators | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% | <10% | 10-20% | 21-50% | 51-75% | >75% |
| Floor (50%) | 48% | 21% | 30% | 0% | 0% | 25% | 50% | 25% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 13% | 19% | 4% | 12% |
| Floor (70%) | 64% | 18% | 18% | 0% | 0% | 38% | 50% | 13% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 56% | 12% | 17% | 8% | 8% |
| Rec (50%) | 48% | 21% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 52% | 12% | 17% | 4% | 15% |
| Rec (70%) | 52% | 30% | 18% | 0% | 0% | 0% | 63% | 38% | 0% | 0% | 90% | 0% | 5% | 0% | 5% | 56% | 10% | 15% | 8% | 12% |
| BTF-ACI (50%) | 27% | 27% | 45% | 0% | 0% | 0% | 13% | 75% | 13% | 0% | 90% | 0% | 0% | 5% | 5% | 40% | 13% | 23% | 12% | 12% |
| BTF-ACI (70%) | 39% | 30% | 30% | 0% | 0% | 0% | 38% | 63% | 0% | 0% | 90% | 0% | 0% | 5% | 5% | 44% | 15% | 19% | 10% | 12% |

**Notes:**

1. Compliance costs as a percent of revenues = [Total compliance costs per ton]/[Waste burning revenues per ton + Energy savings per ton]
2. On-site incinerator revenues are equal to the costs generators avoid by not shipping the waste to a commercial incinerator (waste fees charged + transportation costs).
3. High-end of range (>75 percent) includes systems not currently burning hazardous waste.

**PRELIMINARY ECONOMIC IMPACT RESULTS**

**CHANGE IN AVERAGE OPERATING PROFITS PER TON OF HAZARDOUS WASTE BURNED FROM THE PROPOSED MACT**

**Price pass through assumed:** **100%**

| Options | Cement Kilns | | | LWA Kilns | | | Commercial Incinerators | | | On-site Incinerators | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule | Operating Profit Margin | | % Margin after the Rule |
| | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | | $ Change | % Change | |
| Floor (50%) | $0 | -11% | 72% | ($9) | -22% | 50% | $7 | -1% | 58% | ($8) | -6% | 60% |
| Floor (70%) | $0 | -7% | 75% | ($11) | -20% | 52% | $2 | -1% | 58% | ($12) | -5% | 60% |
| Rec (50%) | $0 | -11% | 72% | ($21) | -34% | 43% | $7 | -1% | 58% | ($8) | -6% | 60% |
| Rec (70%) | $0 | -8% | 74% | ($23) | -34% | 43% | $3 | -1% | 58% | ($11) | -6% | 60% |
| BTF-ACI (50%) | $0 | -21% | 64% | ($15) | -36% | 41% | $27 | 1% | 59% | ($5) | -8% | 58% |
| BTF-ACI (70%) | $0 | -16% | 67% | ($19) | -37% | 41% | $18 | 0% | 58% | ($10) | -8% | 59% |

**Notes:**

1. Operating Profits = (weighted average price per ton + weighted average energy savings per ton + assumed price increase due to compliance costs passed through) - (average baseline costs per ton + average total annual compliance cost per ton). Assumed price pass-through is a set percentage (shown at the top of this exhibit) of the median compliance cost for the most efficient combustion sector. As this is a static model, we have capped the price pass-through using the combustion systems expected to remain burning hazardous waste even though the original pass-through value included some systems expected to stop burning. This is a better approximation of the impetus combustors have to raise prices, though it is not a precise predictor. To address uncertainty regarding the amount prices will rise, a variety of price increase scenarios were used. All other averages were calculated after consolidation, and include only those systems that continue to burn hazardous waste.
2. Operating profits exclude overhead, other administrative costs, and taxes. Actual after-tax profits will be lower.
3. Percentage Operating Profit Margin = average operating profits per ton / (weighted average price per ton + assumed price increase due to compliance costs passed through). Percentage profit margin after the rule is calculated using the same formula with post-rule operating profits and prices.
4. Change in operating profits per ton = Post-rule operating profits per ton - baseline operating profits per ton. Percentage change in operating profits margin = (post-rule operating profits margin - baseline operating profits margin) / baseline operating profits margin. Baseline operating profit margins for systems remaining open after consolidation can be calculated by dividing the percentage profit margin after the rule by one plus the percentage change in the operating profit margin. For consistency, baseline values have been calculated using the median compliance cost per ton for facilities that remain in operation after the rule for each MACT option.